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Annual Oration

ON

THE FUTURE OF LONDON MEDICAL EDUCATION.

Delivered before the Medical Society of London on May 16th, 1904.

BY SIR ISAMBARD OWEN, M.D. CANTAB., F.R.C.P. LOND.,

VICE-DEAN OF THE FACULTY OF MEDICINE OF THE UNIVERSITY OF LONDON.

MR. PRESIDENT AND GENTLEMEN,—Some years ago I met a distinguished foreigner on his first visit to London. He said: "What a strange people you are in England. Your country has given birth to some of the greatest leaders of modern thought. Had we been fortunate enough to call them compatriots their monuments would have been conspicuous in our towns, the public places of our capital would have borne their honoured names. I have traversed London," he pursued, "without once being reminded that I was in the country of Darwin and of Spencer; the name even of Newton met my eye only at the corner of a back street off Holborn." I did my best to explain the apparent paradox. I traced in detail the principles of English street nomenclature; I urged the probability that the Newton of High Holborn was not the author of the "Principia" but a local builder; I pointed out that a London statue was the very last form of memorial a philosopher would wish for; but my companion went away only half satisfied and left me, to speak frankly, as unconvinced as himself. One cannot in candour deny that the contrast is somewhat odd between the commanding position in the history of science which England owes to the labours of a few of her gifted sons and the attitude of comparative indifference which the mass of contemporary Englishmen display, I will not say merely to the personal fame of their illustrious pioneers, but in general to the entire question of the advance of scientific knowledge within their bounds and to the development of the means of national education which that advance demands. Elsewhere in civilised Europe we are made conscious of a franker public recognition of the change that the last century made in the conditions of the modern world, of the extent to which the cultivation of exact knowledge has revolutionised the requirements of public and private business, and of the obligations and necessities which the new order of things has imposed on the community. Elsewhere than among ourselves it is not thought a strange thing that the resources of a State should be employed to extend the bounds of abstract knowledge; elsewhere we see the organisation of education no less an object of government than the ordering of the police or the control of the highway. Even in comparatively poor countries we find scientific knowledge and trained intellects regarded as sound public investments and the popular voice applauding a liberal application of public money to secure them. May we not say that the time has come when England should make up its mind whether the continental view of the requirements of the age is right or wrong? If it be right one cannot without concern view the extent to which this country has lagged behind. At present England speaks with uncertain voice and mind. She evinces no real conviction of the practical value of scientific knowledge or scientific training. Science is lauded to the skies in words and left to starve in fact. Research is commonly treated as though it were a matter of merely private ambition or concern. Commerce and industry are still in doubt whether any more scientific training is necessary for their employés than sufficed a century ago. In questions of public education, except as far as they may concern a point of religion, the generality of Englishmen hardly affect an interest.

The prevailing note of indifference belongs to no particular class or section. The country squire who regards schools as an insidious means of undermining agriculture may be matched by the industrial magnate who frankly despises all technical knowledge gained outside the workshop. The Minister who with difficulty consents to make a public grant for research has himself to wrap its object in some specious guise of "utility" lest the popular voice should condemn it as a dole to a privileged class. In the matter of public education half-heartedness has led us into a course as wasteful as it is illogical. For 30 years past, at a vast expenditure, we have been educating the entire population up to a preliminary stage and providing no means for those who show themselves capable of it to proceed further. If a national system of education is to produce a national advantage worth the money it costs its aim must surely be largely a selective one. The ultimate object, from a statesman's point of view, of national education is to bring the best brains of the country, or, to speak more precisely, the best combinations of brains and energy, to the front; to bring them into the positions in which they can be turned to the best account in the national struggle for supremacy. In England we have stopped at the first stage, the most costly and least remunerative. We have produced year by year a mass of educable material and made nothing further out of it. Whatever individual talent the elementary school may have revealed we have taken no care to insure its after-development. We have laid a costly foundation and built nothing upon it. Can we wonder that so many Englishmen regard national education as a failure and speak of it as a device to convert useful workmen into unnecessary clerks? If it be not so in fact it is not the fault of the policy that has been followed.

To all this there is a significant exception. John Bull's carelessness about science and education stops with the shore. When he has to deal with his own chosen element—the sea—he is altogether another man. In nautical matters no one values exact knowledge more; no one, unless perhaps his recent pupil in the Far East, has more assiduously cultivated scientific methods or been more careful of the training of the men to whom he entrusts his destinies. We need not, therefore, commit the absurdity of supposing indifference to science to be any permanent feature of the English character. It is but a passing phase, the origin of which we may discern in patent historical causes. Great Britain entered on the Victorian era under peculiar advantages. Our previous rivals in Europe had been exhausted by long wars which had brought us no greater disaster than increased taxation. America was still almost a negligible quantity. Our early use of coal and the mechanical inventions to which it had given rise had aided in giving us a long start of our contemporaries in the modern world which those inventions were bringing into being. Other nations might claim superiority in the graces of life; in commerce, in industry, in material civilisation generally, the United Kingdom for many years was easily ahead of them all. We fancied, perhaps, that this was to last for ever. Other nations had painfully set about the task of organising their resources, systematising their knowledge, trying to make the most of the human material they possessed; we had, we thought, no need to do the same; our natural energies and superior aptitude would always keep for us the supremacy we had gained. In matters of education England no less enjoyed during this period a pre-eminence it has been difficult for her to forget. The universities of the continent had long been in a state of decay, material as well as intellectual. The last relics of the great mother University of Paris, that had once ranked in authority with Pope and Emperor, had disappeared in the Revolution; of her half hundred of colleges nearly all had vanished. The collegiate foundations of Oxford and Cambridge, on the contrary, had steadily grown in opulence and lost nothing of external splendour. In the middle of the last century Oxford and Cambridge, to say nothing of Eton and Winchester, were as far in advance of anything of the kind elsewhere as the commerce of the Thames or the industries of Lancashire. As was natural, Englishmen grew to regard their two ancient seats of learning as the type-universities of the world and the particular kind of education prevalent there as the ideal of what university education should be. Universities elsewhere have since multiplied and gathered resources; economic causes have diminished the income of our once wealthy colleges; but England is slow to realise the new situation. The appeals for help which Cambridge has been lately making to its wealthy alumni are passing almost unregarded and the great majority of Englishmen would still, I believe, be surprised to be told that, measured by contemporary European, to say nothing of American, standards, neither Oxford nor Cambridge would be reckoned among first-class universities.

Whether it be that we forgot, in the later years of the nineteenth century, a familiar apologue, whether it be that we had grown into the habit of relying too much on our natural advantages and neglecting the means of improving them, or thought that the world would stand still for us, certain it is that of late we seem to have awoke rather suddenly to the disagreeable fact that in some of the departments of the world's business in which we thought our supremacy most secure we are being overtaken, and possibly distanced, by countries that we scarcely regarded as rivals a generation ago. It is not only that the tortoise shows signs of overtaking the hare; the new world, we begin to find, has bred a hare at once fleeter and more persistent than ourselves. Now perhaps one may hope that a hearing will be given to those who have long been speaking to unwilling ears and calling attention to the neglected state of national education in the heart of the empire. We have long had it pointed out to us with what heed these matters were regarded in continental countries, how carefully their educational systems were thought out, how liberally even poor nations were voting money for educational purposes, but to all this little attention has been given, these things being apparently regarded as necessary only for the foreigner. Will Englishmen be equally careless of what is being done in the United States and in our own North American colonies? Americans can hardly be set down as a second-rate people, or an unpractical race, or an unsuccessful one. It may be that London will not disdain to learn something from them. There was published in London a few weeks back the report of the Mosely Educational Commission to the United States, the second of the two commissions which Mr. Alfred Mosely despatched at his own expense to endeavour to trace the cause of the success of Americans in their competition with ourselves. The commission included 26 men prominent in the British educational world; the reports they sent in run to 400 closely printed pages and every page is interesting reading. The contents may well startle this country, if anything can, out of its apathy with regard to the matter.

Everything, let me say at once, is not represented as perfect in American education. The commissioners found much to criticise in American educational methods, in their lack of thoroughness in certain directions, in a general tendency to underpay the *personnel* and in a certain disposition on the part of private benefactors to regard buildings and sites as of more importance than men. But these, it is frankly admitted, are faults of immaturity and over rapid growth; the greater part of the American educational institutions are barely a generation old. Nor did the commissioners find that thoughtful Americans were in the habit of looking on education as the source of their prosperity. That they were disposed rather to attribute to the inherent qualities of their composite and selected race. But, what was more significant, they regarded the national interest in education as the natural expression of the very qualities that made them successful and were confident that if their public education had not been the cause of their prosperity it was an essential condition of their prosperity being maintained.

American interest in education is not of recent origin. The practice of appropriation of public land to educational purposes by Act of the Federal Government dates from the early years of American independence and the most extensive measure of this kind was passed in the crisis of the Civil War. Up to the year 1900, as may be learned from the educational reports prepared for the Paris Exhibition, the United States Government had in this way assigned upwards of 86 000 000 acres, an area larger than the whole of the United Kingdom, out of the public domain for the support of education. The total value of Federal education grants in land and money to the same year, the land being valued only at its original selling figure, is stated by the same authorities to be nearly £60,000,000. This, it will be understood, is the grant of the Federal Government alone and has nothing to do with the contributions and levies of the separate States and their cities. Private benefaction has been on a still more remarkable scale. Private gifts and bequests for university education alone, says one of the Mosely commissioners, have amounted to £40,000 000 in the course of 30 years. £14 000,000 is given by one of the 1900 reports as the sum of the private benefactions of the single year preceding to universities, colleges, schools, and libraries. Mr. J. D. Rockefeller and others are said to have spent £4,000,000 on the University of Chicago and other recent foundations are reported to be still more royally endowed. Harvard, at the present time, draws an annual income of nearly or quite £200,000 from private benefactions. Though medicine is as yet the least favoured and one of the most backward branches of American education the special gifts to it are still far from contemptible. The medical department of the Columbia University of New York, for example, is endowed, including land and buildings, to the extent of £496,000, the site and buildings of the Jefferson Medical College of Philadelphia are valued at £120,000, and a recent benefaction to the medical department of Cornell University in the State of New York is rumoured to amount to £300,000. An imperfect return shows an aggregate of £3,000,000 of property enjoyed by medical education throughout the United States and during the five years 1894–98 private gifts to medical schools are reported as exceeding half a million sterling, being about a sixth of the benefactions made to hospitals during the same period. Of the universal American interest in public education, of the profound belief in the value of public education that possesses all classes in the United States, every chapter of the Mosely Reports is eloquent. Public bodies, we are repeatedly told, grudge no money spent on education, the claim of educational institutions to the best sites, the best buildings, the best appliances that can be obtained is regarded as incontestable; moneyed men are everywhere prompt to recognise the needs of education, industrial concerns are eager to secure the most highly educated men for their employment. The development of public education in the United States is still going actively forward and by all appearance will do so for many years to come.

It is sad to compare with these glowing pictures of educational progress the history of the 20 years of wasted opportunity and effort we have lately known in London, the 20 years of wearisome agitation, of interminable inquiries, of reiterated deputations, of bland official replies, of municipal and public apathy, that we went through before we could get so much as the bare framework of a teaching university in this the richest city of the world. May we hope that in the twentieth century London will turn its eyes to see what these vigorous young communities in America are doing, and that we shall not have to wait 20 years more before our hard earned framework is clothed with living material. In this country at least no form of higher education can claim a stronger title to public support than medical education. Its purpose is the interest of all. Disease and accident are no respecters of time and place; the life of the wealthiest may at any moment rest upon the skill and knowledge of the humblest village practitioner; failure at any point of the sanitary guard which in times of danger preserves a nation from epidemic disease may let in an enemy that will cost the country more than it could ever spend upon its medical schools. The medical profession is not one that can be charged with making a selfish or illiberal use of its knowledge. In all things it has loyally consulted the public advantage first of all. It is a profession of whose voluntary generosity the public never scruples to make unsparing—I had almost written unblushing—use, a profession which meets the heavy demands made upon it with unfailing patience and public spirit. I shall hardly overstate the fact if I assert that a fifth of the entire population of London has at one time or another, in the hour of distress, learned to rely on the public or private charity of the medical practitioner. Medicine, which gives so much and so readily, may surely ask a little in return and expect in all honour that its claims will be ungrudgingly met.

If the claim that medicine is about to make on the inhabitants of London has gone unrecognised till now it is not altogether the public fault. Medicine has perhaps desired too much to be independent and self-sufficing; we have not taken the public sufficiently into our confidence as to the needs of our art, we have troubled too little to see that it was adequately informed. The average non-medical person, it is safe to say, knows at the present day far less of what goes to the making of the medical practitioner than he does of almost any other form of professional education. The developments of medical education during the last quarter of a century have not been trumpeted abroad, "written up" in the press, or made the subject of magazine articles. Of the London hospitals the London public knows much; of the schools of medicine that have grown up alongside of them almost nothing. It would probably surprise the great majority of Londoners to learn that the mere buildings of these schools would in the aggregate suffice for

the needs of many a renowned university, that upwards of four hundred teachers are actively engaged in connexion with them, and that the curriculum pursued in them is at once the most arduous and the most highly systematised form of education that exists in the country. The foreigner would be no less astonished to hear that the entire system has been the result of private effort and that until lately it has been entirely self-supporting. The buildings appropriated to its use in University College and King's College are almost the only public assistance it has to acknowledge; private liberality has hardly gone beyond the foundation of prizes and exhibitions. With the exception of certain professorships at University College there is not at the present moment a single endowed chair in any medical school in the metropolis. Like many other institutions in England, the London School of Medicine was not founded; it grew spontaneously in response to a need. It grew up in close connexion with the 12 great general hospitals, but till lately it had cost them nothing. On the contrary, they were pecuniarily the gainers by it. I ventured some six years ago to estimate that the existence of the medical schools virtually added no less than £50,000 a year to the charitable resources of London and I was not accused of exaggeration.

The endowment of a single professional faculty to the extent of some £24,000 a year, exclusive of premises and library, would seem in London the dream of a rather distant future, but that is the extent to which, in the neighbouring capital of France, the Faculty of Medicine appears to be subsidised from public sources. The statistics of higher education issued by the Ministry of Public Instruction for the ten years 1889–1899 show that in the last year reported on (1897–98) the sums assigned to the purpose of the Faculty amounted to 1,466,212 francs, of which only 859,302 francs were recouped from students' fees, leaving 606,910 francs, say £24,276, provided from public sources, chiefly the coffers of the State. The expenses of the Paris Faculty do not, it may be added, include those of instruction in what we term the "preliminary sciences."

A complete endowment of the Faculty of Medicine is not at present in question in London. We see no reason to apprehend that the schools of the London hospitals will be less able in the future than in the past to provide from their own resources for the professional education of as many students as their ample hospitals can accommodate; but there is a strong and growing sense of the need of relieving them from the increasing pressure of a burden which at present they are under the obligation of supporting, but which is properly none of theirs to bear. The medical curriculum has long since everywhere divided itself into two nearly separate portions, the one mainly professional, while the other tends more and more to become purely academic. It is within my own recollection and that of many here that the student of other days, while still pursuing his ordinary anatomical and physiological studies, in some cases while working only at the introductory physical and biological sciences, was expected or encouraged to spend a part of his time in the wards and out-patient rooms of his hospital and to familiarise himself thus early with the aspects of disease. That is now virtually at an end. The increasing requirements of the earlier parts of the curriculum have rendered it impracticable. The contemporary pupil, though nominally attached to a hospital, pursues as a general rule the first two years, or three as the case may be, of his curriculum under almost purely academic conditions and rarely enters a medical or surgical clinique for any serious purpose until he has surmounted the barrier of his anatomical and physiological examinations.

I need not stop to discuss whether the change of practice is of unmixed advantage or no. Something, it will doubtless be said, is lost in the present day which the older and less differentiated plan of education was able to impart, but this, I fear, is a profitless question to raise. The present system is universal, or nearly so; it has forced, or is forcing, itself by the logic of circumstances on every seat of medical education alike and it must be taken as one of the facts of the case that we have to deal with. In almost every place of medical education except London a further differentiation has already taken place. The responsibility of providing for the earlier portion of the curriculum has ceased to rest upon the medical school properly so called. In Lancashire and Yorkshire, in Birmingham and Newcastle, and in Wales endowed universities and university colleges have taken this part of the work upon themselves, leaving the schools of medicine, in the strict sense of the term, to their proper task of teaching the theory and practice of medicine and surgery and such of the more advanced branches of science as cannot conveniently be separated from clinical work. In London, without a central teaching authority to assist, to lead, or to coördinate the scattered educational agencies at work in her vast area, this further step has till now been impossible. The medical schools, unendowed and without external aid as they are, have had to bear the burden of the preliminary education themselves. Each separate school, in order to maintain its position, has found itself obliged to offer a medical curriculum complete in all its parts, academic as well as professional, and to provide the buildings, laboratories, and external teachers necessary to make it so. Until London possessed a university in fact as well as in name no practical way out of the difficulty could be seen and the difficulty has been a steadily increasing one. While politicians disputed whether 5,000,000 of population should have two titular universities or only one, whether professors of European fame should be dealt with as honourable men or objects of public suspicion, and how far the laying of academic hands on the London matriculation examination would endanger that palladium of British learning, the men who were actually doing the work had to strain every nerve to meet the constantly growing requirements of the long medical curriculum and to keep the London schools of medicine on a level worthy of their historic fame. The work was done. It has, I venture to say, been well done; but the strain on the schools has been no light one and its tendency is still to increase. Over the schools hangs the shadow of the ominous question, How long can the present strain be maintained? A limit will be reached, it must be plainly said, unless London awakes to some sense of its responsibility in the matter. And while London is asleep the provinces are moving. I trust I shall not be understood as saying one word in dispraise of the excellent teaching given in many of the provincial medical schools or in derogation of the highly distinguished physicians and surgeons who are working so ably in them, but the fact nevertheless remains not only that London possesses an unexampled field of clinical instruction but that as long as the greatest prizes of the profession are to be found in the capital the tendency must be for the best clinical talent in the profession to be attracted to the metropolitan hospitals and schools. It would, I will not hesitate to say, be a disaster not only to Londoners but to England and Wales as a whole if London should ever lose the position it has hitherto held as the chief seat of medical education in the country. It is to the grave discredit of so wealthy a capital that such an event should be even imaginable.

Thanks to the reconstitution of the University of London we have at last a definite plan to lay before the public. It is a plan which has been drawn up by the Faculty of Medicine of the University, a body fully representative of medical education in the metropolis, and which has been officially adopted by the Senate of the University as an integral part of its scheme of future development. It is proposed to found as part of the University of London and under its direct control a public Institute of Medical Sciences to undertake teaching in physics, chemistry, biology, anatomy, and physiology for the purposes of medical students. The classes of the institute will not be limited to those only who are undergraduates of the University and propose to take its degrees. Provision will equally be made by the University for the instruction of students who are aiming at the College diplomas or the Licence of the Society of Apothecaries. Nevertheless, all who enter the institute will be studying in the University in fact as well as in name. They will be able to commence their career by entering directly at the University and until they have completed their classes in the institute they will not need, unless they wish, to join a hospital at all. They can wait till they have finished the academic part of the curriculum and select their hospital when the time has come for them to begin their clinical work. No compulsion will, of course, be exercised by the University over existing medical schools. Any that may find it to their advantage still to carry on the earlier as well as the later part of the curriculum will be at liberty to do so; those whose policy is otherwise will be able to receive their clinical students directly from the University of London Institute, as now they receive them from the Universities of Oxford and Cambridge and the University College of Cardiff. The University is willing and anxious to establish such an

institute, but to do so funds are, of course, needed and funds for the purpose the University as yet has unhappily none. How much, it will be said, will be required? That has been the subject of careful estimate. Assuming the institute to be started, as contemplated, for 500 students at the outset, and assuming, as is not impossible, that a free site can be obtained, it is reckoned that £160,000 would be sufficient for the necessary buildings and equipment and that the annual expenses on staff and service would not exceed £20,000, of which about two-thirds would be recouped by fees, leaving to be provided from endowment between £6000 and £7000 a year, which brings the total capital endowment estimated as required to £375,000.

To what quarter is the University to look for this necessary sum? On the continent of Europe it would at once be recognised as a legitimate charge on the State. In our country that can hardly be. The tradition that professional education is no affair of the State is still deeply rooted in England. Even the modest subsidy annually granted by the Treasury to the English colleges is given under proviso that no portion of it shall be used for the purposes of the medical school. On State aid we can count but little. In America, if we may judge from the accounts lately brought back by the Mosely Commissioners, the matter would also be speedily settled. Our Chancellor would need but to sally out, pay some half dozen judiciously planned morning calls, exercise the persuasiveness which he is universally allowed to possess, and the thing would be done. Have we no wealthy men in London capable of being fired by emulation of transatlantic gifts to education, who will make this modest benefaction their peculiar care? As we lately learned with so much gratification, a most auspicious beginning at least has been made. May we trust that it will be followed by speedy fruition and that the list of subscribers already privately started will be covered without needless delay. Among them, one may safely predict, will be found not a few members of our own profession, but it must be clearly remembered and understood that it is no personal interest or advantage of the profession that is being sought. The object is, in the fullest sense, one of public concern, and it is to the public, not to the medical profession, that the appeal of the University is particularly addressed.

It would be a poor compliment to a university destined, as we hope, to a great academic position, to let it be supposed that this introductory work is all that the Faculty of Medicine will eventually expect from it. At present it is our most urgent need; but there are more ambitious fields of work awaiting the University later. The idea that the principal duty of a university is the education of undergraduates and that a bachelor's degree is the climax of a university career are among the fading traditions that the nineteenth century bequeathed to us. In the United States the more advanced school of educationists already begin to regard the teaching of undergraduates as but a secondary function of a university, if, indeed, they would admit it to be a university function at all. The preparation of candidates for initial degrees they are disposed rather to relegate to a class of institutions of subordinate rank which in America are called "colleges"; the real work of a university, it is argued by many, is that to which the attainment of an initial degree is only an introduction. "Graduate study," as Americans call it, is already with them a prominent feature of higher education and even seven years ago, according to the reports I have already quoted, 23 American institutions were able to make up between them a total of 4919 resident graduate students, an average of nearly 214 each. The medical world in England has long recognised the importance, and, indeed, the necessity, of graduate study and the number of members of our profession pursuing it in London in one shape or another would probably exceed anything that is to be found in America, but the provision which we have been able to make for it would, I fear, have to sustain a far less flattering comparison. It is certainly not yet so complete as to place any serious difficulty in the way of its absorption into the organisation of the University or to render the coöperation of a powerful university with it other than welcome. With the aid of the University we may perhaps one day see removed the weakness of the London system that has always been most apparent to foreigners—I mean the entire dependence of the academic position of a medical teacher upon the term of his hospital office, with the unavoidable result that some of our greatest clinicians have ceased to teach at the very time when their experience is ripest and their judgment is at its greatest maturity.

May I venture, in conclusion, to deprecate a certain note of impatience that occasionally makes itself perceived in the medical world because the development of our University is not proceeding at as rapid a pace as we could wish. We must not expect impossibilities. To make up the arrears of two generations in a great capital was as huge a task as any university could have had committed to it and some of the difficulties in the way have been very hard to surmount. That the constitution of our University is not an ideal one, that it may be open to the charge of cumbrousness, I, at least, am not concerned to deny; but machinery is of less importance than men, and we need not complain overmuch of a constitution that has committed the interests of our science to such strong and able hands as those of the representatives it has upon the University Senate and placed at the head of our Faculty a man so singularly capable as its present Dean of grappling with the difficulties of the present situation. The best compliment we can pay to the statesmanship and the self-sacrificing labours of Mr. Butlin and his fellow workers in our behalf is, I submit, to give them a patient as well as an earnest support.

The Goulstonian Lectures

ON

SOME DISORDERS OF THE BLOOD AND BLOOD-FORMING ORGANS IN EARLY LIFE.

Delivered before the Royal College of Physicians of London on March 8th, 10th, and 15th, 1904.

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LECTURE III.[1]

Delivered on March 15th.

THE THYMUS.

MR. PRESIDENT AND GENTLEMEN,—I have already remarked upon the prominent rôle played by the adenoid tissue amongst the blood-forming organs of early life and have discussed in general terms the probable reasons for its marked development. It was pointed out also that the mere fact of the extensive development of this tissue in the child and its great functional activity probably rendered it specially liable to become the seat of disease. It is to the study of the morbid processes which affect this tissue, a study which is full of difficulty and in which it must be admitted great confusion exists, that I have now to direct your attention.

Prominent amongst the local collections of adenoid tissue met with in the body and of special interest from the air of mystery which has always enshrouded its functions is the thymus gland. A study of the rise and fall of the functional importance of this gland may therefore be expected to throw some light on the functions of the adenoid tissue in general, for there can be little doubt, I think, that the thymus is not possessed of any functions peculiar to itself and distinct from those of the histologically similar tissues met with throughout the body, whilst, on the other hand, its compact structure and its unique situation render it peculiarly easy of study. In the human fœtus the thymus has attained the infantile type by the end of the third month of intra-uterine life, its development being brought about by a transformation of the epithelial cells derived from the hypoblast, and from this period onwards up to the time of birth it increases rapidly in functional activity, so that by the time when intra-uterine development is complete its weight relative to that of the body as a whole has reached its maximum point. From the moment of birth onwards it undergoes a steady decline which, however, is at first very gradual but after the second year goes on at an accelerated rate, although the

[1] Lectures I. and II. were published in THE LANCET of May 7th (p. 1253) and 14th (p. 1323), 1904, respectively.

gland is still possessed of some degree of functional activity up to the period when the growth of the body is complete. The following table from Friedleben's classical monograph on the thymus indicates in a striking way the growth and decline of the gland:—

Period of development.	Weight of thymus (in grans) to every pound of body weight.[2]
Third to fifth month of fœtal life	8·5
Sixth to seventh ,, ,,	21·6
Eighth ,, ,,	27·3
At birth	33·8
First to ninth month	28·5
Ninth month to second year	22·7
Second to fourteenth years	10·6

This decline in the growth of the thymus coincides exactly, as we have seen, with a steady diminution in the number of lymphocytes in the blood and may be taken, I think, as the index of a steady diminution in the functional activity of the adenoid tissue generally. We are here again brought face to face with the intimate relation which exists between the adenoid tissue and the growth and development of the body as a whole or in chemical terms with the rate of general metabolism. It is during the period when metabolism is most active that the thymus maintains its greatest weight, and I may suggest in passing that there may perhaps be found in this fact an explanation of the resumption of activity on the part of the thymus in such a disease as exophthalmic goitre, in which the rate of metabolism is usually increased, as well as of its tendency to persist in cases of gigantism and acromegaly.

I have said that the variations in the size and development of the thymus may probably be safely taken as indicating corresponding variations in the adenoid tissue as a whole. It would not be surprising if in a tissue so important as that which we are considering there were large room for the exercise of vicarious function, so that an over-development of adenoid tissue in other parts of the body can take the place of the thymus and *vice versâ*. In favour of this view are the facts that the thymus may be entirely absent and yet growth be unimpaired (Friedleben) in which case presumably its functions are fulfilled by the adenoid tissue elsewhere. In favour of it also are the great individual variations in the size of the gland—variations which are not fully to be explained by mere differences in the body weight, which have struck all those who have made observations on the weight of the thymus at different ages. It is not improbable too that, as Mettenheimer has pointed out, the degree of development of the thymus at any given age varies in different countries and races which would be quite in harmony with the known variability in the rate of growth and development of the body under different conditions of inheritance and environment. In favour also of the vicarious replacement of the thymus are the results of observations on its experimental removal which show that no serious consequences to growth or development ensue, whilst the number of lymphocytes in the blood after the operation is increased rather than diminished, which is exactly what occurs after excision of the spleen and has been alleged by Ehrlich to be due to a vicarious over-activity of the lymphatic glands.

The great individual differences in the development of the thymus to which reference has already been made render it very difficult to be sure of pathological variations in its size. It was long ago shown by Friedleben that anything which interferes with adequate nutrition reacts with special force upon the thymus, so that its weight is notably lessened in starvation or after wasting diseases. The marked atrophy of the thymus in cases of infantile marasmus was first pointed out by Seydel. Hansen, Farret, and Mettenheimer went further and were inclined to regard the wasting of the gland as primary and that of the body as a whole as secondary, a view which has recently been insisted upon by Ruhräh and others.[3] Such a relationship, however, is very difficult of proof and against it is the fact that experimental removal of the gland is not followed by symptoms of wasting. In the meantime and until more convincing evidence has been collected it seems wiser to regard the atrophy of the thymus as associated with the diminution of growth and metabolism which accompany marasmus rather than as being the primary cause of the latter condition.

[2] The gran = six centigrammes, or 0·9 grain.
[3] The American Journal of the Medical Sciences, November, 1902.

In discussing *hypertrophy of the thymus* we are again met with the difficulty of fixing upon a normal standard of development. Ruhräh gives the normal average weight of the gland during infancy as 18 grammes. Thursfield,[4] on the other hand, states that the normal weight is usually greatly exaggerated and that the average is between six and seven grammes. Observations on this point which have been made at the London Hospital for some time, but which are not yet ready for publication, tend to show that the weight of the gland varies very greatly in different children of the same age and that no constant ratio to the body weight can be shown to exist. Most observers are agreed, however, that an excessive development of the thymus is sometimes met with in which it may be increased to ten times the normal or more. The majority of such cases have been found, as is well known, in infants who have died suddenly with symptoms of asphyxia and to such cases the term "status thymicus" has been applied. Other writers who regard the enlargement of the thymus as merely a part of a general increase in the adenoid tissue throughout the body prefer to speak of the condition as the "status lymphaticus" or "lymphatism." The association of sudden death with enlargement of the thymus has long been recognised and many cases of it have been recorded but we are still quite in the dark as to the relationship of the enlargement of the gland to the occurrence of death. It would be going beyond the scope of these lectures to discuss this subject in detail, but as such cases, though not very uncommon, have received but scant attention in this country some of the leading views which have been put forward may be briefly indicated. According to one set of hypotheses the enlarged thymus in these cases acts purely mechanically either by direct pressure on the air passages or by interference with the vagus nerves or by exciting reflexly a spasm of the glottis. All these conjectures were subjected to severe criticism by Friedleben who concluded that none of them was tenable. There seems to be no doubt, however, that in some at least of the published cases there was distinct compression of the air passages and it has been suggested that a sudden throwing back of the head may, by vascular congestion, so increase the degree of pressure exerted by the enlarged gland as to induce asphyxia.[5] Such an occurrence would be comparable to the sudden death which may occur from the administration of an anæsthetic to a patient who is the subject of goitre. Nor can it be denied that spasm of the glottis may play a part in some at least of the cases, just as it occasionally produces sudden death in laryngismus stridulus though how the enlarged gland can excite such spasm is more difficult to explain.

According to the other leading view which has been put forward the enlarged thymus in these cases is not directly the cause of death but is merely an index of a general "lymphatic" dyscrasia which entails a general feebleness of resistance and renders the subject of it liable to sudden death from any cause. Several instances have occurred, for instance, whilst bathing. The very vagueness of such a theory puts it almost beyond the scope of criticism, but I may say that in at least one typical case I could find no increase of the adenoid tissue elsewhere nor any sign of impairment of health.[6] It certainly would be interesting to have an account of the state of the blood in these cases, particularly as regards the number of lymphocytes, but as enlargement of the thymus is almost impossible of diagnosis during life such observations are not yet forthcoming.[7] Of the other affections of the thymus I do not propose to speak, for they are for the most part identical with those to which all adenoid tissue is liable, whilst its comparative immunity to others, such, for example, as tuberculosis, is no doubt due to its not being in direct lymphatic connexion with any mucous surface.

AFFECTIONS OF THE LYMPHATIC GLANDS.

We now approach the consideration of a group of disorders in regard to which more doubt and confusion exist than in respect of perhaps any of the other affections of which I have hitherto spoken. The confusion to which I have referred is traceable to two causes: (1) to the adoption of a clinical classification based only upon the characteristics which can be observed at the bedside; and (2) to an

[4] St. Bartholomew's Hospital Reports, vol. xxxviii., p. 129, 1902.
[5] Lenbuscher: Münchener Medicinische Wochenschrift, No. 25, 1903.
[6] Diffuse overgrowth of adenoid tissue throughout the body has, however, been described by several observers in this condition.
[7] Ewing has found a lymphocytosis in one case.

inadequate study of the morbid histology of the affected organs after death. The adoption of a clinical classification would not be open to so much objection were it not that some of the most important criteria upon which such a classification if it is to be of any real value can alone be based have until recently been unavailable and are still too often omitted in the published reports of such cases. I refer especially to the information afforded by a careful examination of the blood. I need hardly point out that it is only within quite recent years that the importance of such examinations has been realised but for a long time it has been customary to label large groups of the cases about to be described with some name descriptive of their grosser clinical characteristics. Hence, an extensive nomenclature sprang up and was received into the text-books and made the basis of systematic descriptions and it is only now that we are beginning to realise how inadequate it is to our needs that names which were believed to indicate some one definite disease may really cover several different pathological processes and that our whole nomenclature requires to be reconsidered and recast. Now I think one may truly say that few things retard the advance of the scientific knowledge of disease more than the existence of a terminology which has ceased to have any real correspondence with clinical and pathological facts and we need not wonder that progress in the investigation of this branch of our subject has been made with but slow and faltering steps. If we think, for instance, of such terms as "lymphadenoma," "pseudo-leukæmia," "malignant lymphoma," or "lympho-sarcoma," how vague and indefinite is the impression they convey! When an author describes a case under one of these designations how can we feel any certainty that the conception present to his mind is the same as that which the term employed arouses in our own? But it is hard to slough off outworn pathological creeds and in attempting to deal with these diseases I shall not have the presumption to suggest any brand-new terminology. I shall content myself with the humbler task of trying to give greater precision to some of the terms already in general use and with describing the clinical features and morbid histology of the pathological processes with which I believe them to correspond. Nor, it must be confessed, is the time yet ripe for a final classification, for any such to be of permanent value must be based, I take it, not upon the clinical features alone nor yet upon pathological histology but upon a knowledge of the particular morbific agency at work, of which both of these are but the expression. We await the progress of research to furnish us with this knowledge, and fortunately there are many signs that we are not likely to wait in vain. Meanwhile, in pursuance of the intention indicated above I turn to consider in the light of clinical and pathological observation that group of diseases which specially affect the lymphatic glandular system in early life. I propose, for the sake of greater clearness in this matter, to attempt no rigidly systematic order of treatment but rather to describe as briefly as may be some extreme clinical types of each disease and subsequently to consider the question of the relation of these to one another and the possible existence of intermediate forms.

1. GENERALISED TUBERCULOUS ADENITIS.

The first case to which I wish to direct your attention was that of a girl, aged 12 years, who was admitted into hospital suffering from anæmia with general enlargement of glands. The illness had begun eight months before with the appearance of a lump above the right collar bone. On admission she looked very anæmic; the glands were greatly enlarged in the neck, axillæ, and groins, being in some cases discrete, in others matted together. Neither the liver nor the spleen was enlarged, but there were some moist sounds over the right lung. There was distinct remittent fever which exhibited periodic exacerbations during which the glands became more enlarged and slightly tender. Examination of the blood showed 5,000,000 red cells per cubic millimetre with a decided reduction of hæmoglobin. The white cells varied in number at different examinations from 15,000 up to 70,000 per cubic millimetre and consisted mainly of the polynuclear variety. The patient went steadily downhill, developed signs of pressure on the bronchi, and died three months after admission.

Post-mortem examination showed that the glands were everywhere much enlarged and in part caseous, those in the mesentery being partly calcified. The tracheal and bronchial glands formed a large mass which had compressed the air tubes. There were some soft white nodules of the size of a bean in the right lung and in the muscular substance of the heart. The spleen was considerably enlarged and contained some white masses resembling infarcts. Sections of the glands showed a typical tuberculous structure and the presence of masses of tubercle bacilli.

A somewhat similar case was that of a boy, five years of age, who had suffered for six months from dyspnœa which seemed to ensue upon an operation for adenoids, prior to which he had enjoyed perfect health. He was markedly anæmic and had slight general œdema with effusion into the pleuræ and some ascites. There was enlargement of the glands in both sides of the neck and in the left axilla but the spleen could not be felt. There were signs of pressure on the right bronchus and some scattered patches of consolidation throughout the right lung. There was also a slight degree of irregular pyrexia. The blood exhibited the ordinary changes of a pronounced secondary anæmia along with a considerable polynuclear leucocytosis. Death took place from exhaustion, the case being regarded as one of lymphosarcoma. At the post-mortem examination, however, it was found that there was extensive caseation of the bronchial and mesenteric glands with patches of tubercle in the lungs and extensive ulceration of the intestine. The spleen was healthy. Tubercle bacilli were found in the glands in large numbers.

Such cases as these seem best described as examples of "multiple acute tuberculous adenitis." They are by no means common, but probably correspond to what used to be spoken of by the older writers as acute scrofula. Examples of such multiple glandular tuberculosis were described long ago by Hilton Fagge[8] and by Pye-Smith,[9] and a good example in a woman, aged 23 years, has been recorded by Francis Delafield.[10] More recent cases which may probably be referred to this group have been described by Hutchmann and Stross[11] and by Ferrarri and Comonotti.[12] The chief features of cases of this type are, I believe, these. They tend to occur especially in young subjects. They run a comparatively short course marked by irregular pyrexia often with periodic exacerbations. They exhibit more or less generalised enlargement of the lymphatic glands but not to any extent of the spleen and a pronounced degree of general anæmia accompanied by more or less polynuclear leucocytosis, the only exception to this rule that I am acquainted with being the case recorded by Ferrarri and Comonotti in regard to which it is stated that leucocytosis was absent. They may be regarded, I think, as examples of multiple infective adenitis, the infective agent being the tubercle bacillus.

HODGKIN'S DISEASE.

Somewhat resembling the above in its clinical features, but totally distinct from them, I believe, is the following case:—

The patient, a girl, aged two years and two months, had suffered for a year from enlargement of glands in the neck. When she first came under observation she was markedly anæmic and hard discrete glands could be felt in the neck and groins but not in the axillæ. The liver was slightly enlarged. The spleen was two fingers' breadth below the costal margin and felt hard and nodular. There were some moist sounds over the lower lobes of both lungs and continuous irregular pyrexia. Examination of the blood showed 1,180,000 red cells and 5000 white cells per cubic millimetre. The red cells were very pale and unequal in size and a few normoblasts were present. A differential count of the white cells showed the presence of 51·5 per cent. of polynuclears, 48 per cent. of uninuclear forms, and 0·5 per cent. of myelocytes. Death ensued from exhaustion without material alteration in the characters of the physical signs or blood, the case being regarded as one of tuberculosis.

The post-mortem examination showed great enlargement of the mesenteric and retroperitoneal glands, which on section were hard, pale, and glistening, with, in some, a few spots of caseation. The mediastinal glands were in a similar condition. The liver exhibited on its surface numerous white fibrous plaques which on section were seen to extend into the substance of the organ in the form of dense fibrous septa. The spleen showed the typical "hardbake" characters. The other organs were healthy.

Microscopical examination of the affected organs exhibited the entire absence of any tuberculous structure or of tubercle bacilli in any of the sections examined, but on the contrary the presence in a typical form of the changes presently to be described as characteristic of what for convenience we may still speak of as Hodgkin's disease.

In seeking to elucidate further the nature of such a case as this and to outline the features of the group to which it belongs we find ourselves on ground which has been, and still is, the arena of much controversy—controversy the issues of which have been much obscured by the nature of the terminology employed and by the neglect of that precise study of the morbid histology of the disease which I have already had occasion to deplore. It is doubtless in the knowledge of everyone here that the term "Hodgkin's disease" was first introduced into medical literature by Sir Samuel Wilks in a paper published in Guy's Hospital Reports in the year 1865 (vol. xi., p. 56). He applied it to cases similar to those already described by Hodgkin some years previously in his well-known paper entitled "On Some Morbid Appearances of the Absorbent Glands and Spleen."[13] The term, although a graceful and well-deserved tribute to the pathological acumen of Hodgkin, was, from a purely scientific point of view, an unfortunate one from the outset, for of the cases originally described by Hodgkin

[8] Transactions of the Pathological Society, vol. xxv., pp. 22 and 238.
[9] Ibid., vol. xxvi., p. 202.
[10] New York Medical Review, 1887. No. 16, p. 31.
[11] Deutsche Medicinische Wochenschrift, 1893, No. 21.
[12] Wiener Klinische Wochenschrift, 1900, No. 52.
[13] Transactions of the Royal Medical and Chirurgical Society, vol. xvii., p. 68, 1832.

two at least were certainly not true examples of the disease now associated with his name. Cases more or less resembling in their clinical and gross pathological aspects those first described by Hodgkin were afterwards published on the continent in the same year as that in which Wilks published his paper and a French observer, Bonfils, showed that such cases were not attended by any increase in the white cells of the blood.[14] This absence of any increase of white cells in the blood formed such a marked distinction between these cases and those of so-called "lymphatic" leukæmia that Cohnheim in the year 1865 sought to emphasise the distinction by introducing into pathology the unfortunate term "pseudo-leukæmia,"[15] whilst three years later we find Trousseau in his ninety-first clinical lecture applying the term "adénie" to cases characterised by progressive enlargement of glands without blood change to mark them off from tuberculous and other glandular enlargement, cases of which, as he states, Hodgkin had already given a good description. Billroth[16] still further complicated matters by introducing the word "lymphoma," meaning thereby what Cohnheim meant by pseudo-leukæmia, but opposing it to the term "lymphosarcoma" which was employed by Virchow[17] and which Billroth wished to discard altogether or to restrict only to cases of true sarcoma of glands. Meanwhile the term "Hodgkin's disease" had come into general use in English literature, whilst "pseudo-leukæmia" found perhaps the greatest degree of acceptance on the continent. As clinical investigation became more accurate, however, and as the number of recorded cases increased, it began to be believed that in all probability more than one variety of morbid process was being so described and it is interesting to find Virchow declaring so long ago as 1892 that he had always regarded the term "pseudo-leukæmia" as a "Mischmasch," whilst in recent German writings there is a strong tendency to discard its use altogether and to substitute for it "malignant lymphoma" (Pappenheim) or "lymphomatosis" (Türk).[18]

It is refeshing to turn from these shifting quicksands of a changing nomenclature to the firmer ground of pathology, and, assuming that there is a group of cases which are characterised clinically by progressive enlargement of the lymph glands and sometimes also of the spleen without any increase of white cells in the blood—call them provisionally Hodgkin's disease or what you will—to ask whether such cases are marked by any characteristic morbid histology. Curiously enough, this aspect of the question has been largely neglected. While many have put on record cases, called them by one or other of the above names and described in some instances their gross morbid appearances, few have undertaken to give any accurate description of the histological changes met with in the affected structures. This omission has, however, been fully repaired in recent years (though the descriptions do not yet seem to have found their way into the text books) and that largely, one is glad to be able to say, by the labours of English and American workers. Even so far back as 1878 an extremely careful account of the histological characters of Hodgkin's disease was given by Professor Greenfield[19] in a paper read before the Pathological Society of London and published in its Transactions. He described the essential change as consisting in "a sort of chronic inflammation involving especially the fibrous stroma of the gland" and recognised the so-called soft and hard forms of the disease, the glands in the soft or early form being somewhat generally enlarged and the fibrous stroma appearing coarser than normal, whilst a large number of multinucleated cells containing from four to 12 nuclei could be observed adherent to the trabeculæ and often gathered into clusters where the fibrous change was progressing. In the more advanced—or what would be called by some the harder form—he found the glands practically converted into cicatricial tissue. He also described very carefully the characteristic histological changes in the spleen and the mode of their development. This description has been amplified but not in any important respect amended by the observations of subsequent workers. In a recent discussion at the Pathological Society on Lymphadenoma in its Relation to Tuberculosis[20] a very full description of the characteristic histology of Hodgkin's disease was given by Dr. F. W. Andrewes. He states that he has found the following changes: "1. The general plan of the structure of the gland is obscured and simplified; the distinction between cortex and medulla is abolished or nearly so, so that the whole gland has a more homogeneous appearance. 2. The number of lymphocytes is apparently very much decreased, they are proportionately scanty and no longer conceal the supporting framework of the gland. 3. In correspondence with this the framework has undergone hyperplasia, the fibrillar reticulum is conspicuous—its increase may amount to an actual fibrosis. The endothelial cells in connexion with it are more numerous and much more evident, here and there some of them attain a very large size and may contain two, four, or more large and deeply stained nuclei. These are the cells specially characteristic of lymphadenoma described by Virchow. ..... They may properly be described as lymph-adenoma cells and though they are large multinucleate cells they have little resemblance to the giant cells met with in tubercle. They are not so large as the latter, they are more rounded and their nuclei, fewer in number, are larger. They stain more deeply and occupy a more central position; their protoplasm has less tendency to degenerative changes. 4. The eosinophile cells present in normal glands are always demonstrable in lymphadenoma, sometimes but not always, in vastly increased number."

Miss Dorothy M. Reed in a paper published in the Johns Hopkins Hospital Reports[21] has also dealt very fully with the minute anatomy of Hodgkin's disease. The microscopical changes, though apparently quite variable, always represent some stage in the same general process. In the earliest stage one finds only proliferation of the flat, so-called endothelial cells which cover the reticulum of the lymph sinuses and of the large cells of the centres of the lymph nodes which are presumably identical with these. Mitotic figures in cells of this description are frequently seen. Dilatation of the blood-vessels and the lymph sinuses is usually a marked feature of the early stage. As the process advances we find the lymph sinuses and the reticular spaces filled with masses of lymphocytes and proliferating endothelial cells. The presence of these newly formed cellular elements destroys the normal appearance of the gland by obliterating the distinction between the follicles and the sinuses. The endothelial cells, which show many karyokinetic figures, form in proliferating large epithelioid cells with vesicular nuclei. Numerous giant cells with one or more nuclei and prominent nucleoli appear in great number. These give evidence in their structure and situation of being derivatives from the epithelioid cells and in places they are the most prominent feature of the specimen. As the process advances the connective tissue shows marked proliferation. The framework of the gland becomes increased and bands of connective tissue, starting often from about the vessels, gradually break up the gland substance into coarse lobules. This process takes place at the expense of the other cells and the tissue undergoes a fibrous transformation which may increase until the coarse bands of fibrous tissue are more prominent than the small cellular islands which they include. Large areas which can only be explained as anæmic necroses are frequently observed, the centres of which show completely degenerated cells with fragmented nuclei, whilst the surrounding connective tissue often exhibits hyaline transformation. It is evident, as Miss Reed points out, that a gland examined at varying periods in the process would appear very different to casual observation. In the early stages we have a very cellular tissue in which the predominating element is the lymphocyte. This represents presumably the soft type of the disease and we can understand why Hodgkin's disease is usually spoken of as a simple hyperplasia of the lymph gland. The fibrosis of the later stage represents the "hard type" and the connexion between the two is not at first obvious. The process in its early stage has been frequently confused with sarcoma and in the later stage with tuberculosis. She agrees

[14] Société Médicale d'Observations de Paris, 1856 (reference from Einhorn's paper in New York Medical Record, July 12th, 1902).
[15] Ein Fall von Pseudo-Leukämie, Virchow's Archiv, 1865, Band xxxiii., p. 451.
[16] Gen. Surg., Path., and Therap., fourth edition, 1869.
[17] Die Krankhaften Geschwülste, Band ii., p. 729, Berlin, 1864.
[18] Pseudo-leukämie und Lymphosarkomatose, Wiener Klinische Wochenschrift, 1899, No. 40; and Pappenheim (Ueber Pseudoleukämie und verschiedene verwandte Krankheitsformen), Archiv für Klinische Chirurgie, 1903, Band lxxi., p. 271.
[19] Specimens illustrative of the Pathology of Lymphadenoma and Leucocythæmia, Transactions of the Pathological Society of London, 1877–78, vol. xxix., p. 272.
[20] Transactions of the Pathological Society of London 1902, vol. liii., p. 297.
[21] On the Pathological Changes in Hodgkin's Disease, with especial reference to its Relation to Tuberculosis, 1902, vol. x., p. 133.

with Dr. Andrewes in considering that eosinophile cells are usually present in great number in Hodgkin's disease but not invariably.

Enough has been said, I hope, to show that cases such as that which I have described above are associated with definite histological changes in the affected structures and we have now to discuss the nature of the pathological process by which these changes are brought about. Two hypotheses have been advanced in this connexion, one that the process is a malignant one, allied to sarcoma formation, and the other that it is "infective" in origin. Of these the latter, or "infective," view has now won its way to almost universal adoption and it would be superfluous to enter here and now into the arguments which have been advanced in its favour. Of the nature of the infective agent, however, we are still in ignorance. A few years ago there arose a strong inclination to regard the tubercle bacillus as the infective agent, Askanazy being one of the first to point out that tuberculous lymphoma might run the clinical course of a febrile pseudo-leukæmia. This view was strongly espoused by Sternberg and elaborately advocated in a paper in which he described the clinical characters and microscopical changes in 15 cases.[22] His position was for a time widely adopted[23] but recently a reaction against it has been manifest for which the more accurate histological studies of Andrewes,[24] Reed,[25] and Simons[26] are largely responsible. It is now recognised that the mere presence of tubercle bacilli in the affected glands in Hodgkin's disease as demonstrated either microscopically or by inoculation experiments is no proof that they are the *cause* of the changes found in the glands, whilst those who have most accurately studied these changes are convinced that they are quite distinct from those characteristic of tuberculous processes. It would seem that the subjects of Hodgkin's disease are specially apt to become infected secondarily either by the tubercle bacillus or by other infective organisms which may gain access to the lymphatic circulation, a circumstance which is not surprising when one remembers how greatly the number of lymphocytes in the affected glands is reduced by the overgrowth of the stroma, whilst it is to the lymphocytes in all probability that the arrest of casual infections is in normal conditions to be attributed. It is to such secondary infections most likely that the variability in the clinical course of cases of Hodgkin's disease and the intermittent pyrexial attacks which they often exhibit are due, whilst at the same time they are usually the immediately determining cause of the fatal issue of the disease.

Hitherto, it must be admitted, all attempts to trace the presence of any one infective agent have been baffled. Various organisms, pyogenic and other, have been isolated from the glands by different observers, but the claims of none to be regarded as the cause of the disease are supported by any overwhelming mass of evidence. It is possible, of course, that Hodgkin's disease is not really a definite pathological entity but represents merely the reaction of adenoid tissue to any mild chronic irritant present in the circulation of which the tubercle bacillus, possibly in an attenuated form, is merely one. But this, I need hardly say, is not a position in which pathological investigation can be content to rest, and towards identifying the true nature of the infective agent, if such there be, the efforts of future investigators must be directed. Meanwhile the term "Hodgkin's disease" must remain a purely clinical one, comprehending a group of cases which present certain symptoms and signs in common irrespective of the exact pathogenic agent at work in any given case. In future, however, if clinical and pathological observations are to advance hand in hand in unravelling this group of cases and in subdividing it into smaller groups in accordance with their causation more attention than hitherto must be bestowed on some points of clinical investigation. In particular we need more accurate descriptions of the condition of the blood in future cases and more frequent recourse should be had to the tuberculin test.

I have not so far discussed the question whether or not Hodgkin's disease is associated with any characteristic "blood picture." It has been customary to say that it is characterised by some degree of general anæmia—at all events in the later stages—but without any increase in the white cells. This, however, is not sufficient; we want more accurate information as to the relative proportions in which the different varieties of leucocytes are met with in cases of this group. In recent years a certain amount of attention has been devoted to this point and a considerable number of observations have accumulated but not yet sufficient to permit of any general statement being made. One set of writers, of whom Pinkus may be taken as the chief representative, maintain that Hodgkin's disease is characterised by a relative increase of the lymphocytes but others of equally high authority deny that this is the case, at all events invariably. Of seven cases described by Miss Reed[27] there was a relative and absolute increase of the small mononuclear leucocytes in two only, whilst in two other cases these cells were notably few in number; otherwise the blood counts were normal. And of ten undoubted cases (occurring at different ages) of which I have notes there was a polynuclear leucocytosis in two; in one both polynuclear and mononuclear forms were somewhat increased; in five the polynuclears were diminished—that is to say, the lymphocytosis was relative only; and in two alone was there a slight absolute lymphocytosis.

What we want to know is whether the occurrence of a polynuclear leucocytosis is only observed in those cases in which there has been a secondary infection, say with the tubercle bacillus. I am bound to confess that there was no sign of this, to ordinary naked-eye examination at least, in the two cases of my series in which the polynuclear cells were in excess but we want more information on the point. May such cases, perhaps, represent a special variety of the disease and be associated with a special infective agent? or does the relative numbers of the different cells present vary with the stage of the disease? Further, what is the relation of the blood picture to the size of the spleen? I have a general impression that there is a tendency for chronic enlargement of the spleen from any cause to be associated with a relative excess of lymphocytes in the blood, and if so is it only in those cases of Hodgkin's disease in which the spleen is markedly enlarged that such an occurrence is to be observed? To all of these questions no reply can be given until we are in possession of a sufficient number of cases which have been not only accurately observed during life but thoroughly examined after death. As regards the post-mortem examination of such cases I would urge the necessity of a microscopical examination of the bone marrow in every instance. In the whole literature of the subject there is, I regret to say, not a single paper with which I am acquainted which gives a description of the state of the histological changes in the bone marrow, if any, in this disease.

The other way in which future clinical observation might be made of greater service to pathology would be, as I have said, by making more frequent use of the tuberculin test. I am aware that here also we are exposed to the danger of fallacious conclusions. A positive reaction to tuberculin does not necessarily show, any more than the finding of tubercle bacilli in the affected glands, that the process has been to start with a tuberculous one, nor does the absence of such a reaction conclusively negative the possibility of tuberculosis being present. I cannot help thinking, however, that if such tests were made earlier and oftener the results would prove to be of great value. The worth of such observations would be greatly increased if at the same time a gland was excised early in the course of the disease for careful microscopical examination and, if necessary, for inoculation experiments. The ease with which local anæsthesia can now be induced has rendered the trivial operation which this would necessitate practically devoid of inconvenience to the patient and I now make it a rule to employ it in every case where no objection is raised. Were such observations made in a sufficient number of cases and early in the course of the disease we should soon be in a position to say definitely whether or not Hodgkin's disease is ever really tuberculous from the outset. I feel convinced that it is on such lines as these that our observations must be conducted in future if the clinician is to take his proper share in helping to elucidate the difficult problems of glandular disease.

As regards any light which may be thrown upon the nature of Hodgkin's disease by its incidence in childhood there is only this to be observed, that its period of maximum frequency certainly does not coincide with that of tuberculosis. Hodgkin's disease is, it is true, essentially an affection of

[22] Zeitschrift für Heilkunde, 1898, Band xix., p 21.
[23] See papers by Schur (Wiener Klinische Wochenschrift, 1903, No. 5); Hutchmann and Stross (Deutsche Medicinische Wochenschrift, 1895, No. 21).
[24] Loc. cit. [25] Loc. cit.
[26] The Journal of Medical Research, New Series, vol. iv., June, 1903.
[27] Op. cit.

early life. Of 43 cases recorded by Mitchell Clarke[28] ten were below the age of 10 years and 33 were below 40 years, and of 17 cases which were admitted to the London Hospital within the last two years two were below the age of 10 years and seven were below the age of 20 years. The disease, however, is certainly not one of infancy and whereas tuberculosis attains its maximum incidence in childhood about the second year, Hodgkin's disease is decidedly rare below the age of five years. I do not wish to attach undue importance to this point. We know too little of the factors which determine the age-incidence of disease to justify us in drawing any wide conclusions from such statistical observations alone, but at the same time any fact in the natural history of such an obscure affection as this is worthy of note. I have dealt rather fully with this matter and have gone, perhaps, somewhat beyond the legitimate scope of these lectures in thus discussing questions of general pathology, but it is only by taking a wide view of the problem that the best methods of solving it can be adequately presented.

LYMPHOSARCOMA.

The following case may be taken as a type of malignant disease affecting adenoid tissue.

The patient, a boy, aged nine years, had been in bad health since an attack of enteric fever six years before. On admission he appeared to be suffering from anæmia only. He was very pale and with the exception that the glands in the neck were palpable no other physical signs were to be discovered. The red cells were greatly reduced in number and stained badly, macrocytes and microcytes were present, and some pear-shaped forms, and a few normoblasts were discovered. The white cells numbered 5000 per cubic millimetre and the different varieties appeared to be present in normal relative proportions. At first the case was regarded as being possibly one of pernicious anæmia. A month later, however, periosteal growths appeared in the skull and in the neighbourhood of the orbits, so that one began to think of the possibility of chloroma. Blood films now showed a decided lymphocytosis; there were 57 per cent. of mononuclear and 43 per cent. of polynuclear forms in the films. From this time he went steadily downhill, the growths on the skull rapidly increased in size and number, and he died a few weeks later.

The following is a summary of the post-mortem report. The body was very pale and all the blood was fluid. The sternum was soft and infiltrated by a mass of growth which had removed its anterior bony wall so that the growth in front was covered by periosteum only. All the ribs were also invaded by masses of yellowish growth containing numerous points of hæmorrhage. The thoracic organs presented no important change. The retroperitoneal glands were involved in a mass of growth which enveloped the spinal column. The spleen, kidneys, suprarenals, pancreas, and liver appeared to be healthy. Adherent to the iliac vessels and to the nerves of the lumbar plexus was a mass of hard conglomerated growth which was breaking down at places into a greenish-yellow mass. On removing the scalp the skull was found to be studded with innumerable masses of very variable size, some being scarcely visible whilst others were as large as the end of the thumb. They varied in colour from pure white to a deep purple and resembled on section a lymphatic gland. The frontal sinus was bulged and filled with a mass of yellowish growth covered externally by periosteum only. This mass had invaded the roof of the orbit. The whole of the inner surface of the calvarium presented a worm-eaten appearance from growths which had penetrated the bone and the external surface of the dura was studded with similar growths. The base of the skull and the bones of the vertebral column were also infiltrated but the brain and cord were healthy. Microscopically the glands most affected were packed with small round cells, rather larger than ordinary lymphocytes, which had broken through the capsule and invaded the adjacent bone of the vertebral column. The ordinary gland structure was lost. The spleen pulp was stuffed with similar small round cells so that on section it resembled a gland, and similar collections of cells were found here and there between the tubules of the kidney. The lungs and liver exhibited no change.

Such a case as this presents many points of interest. In the first place, I think, it must be regarded as an example of the soft form of lymphosarcoma, meaning by that a growth which begins in adenoid tissue, invades locally, spreads by the lymphatics but not usually (? ever) by the blood, very rarely forms true metastases and does not exhibit any tendency to degenerative changes (Kundrat[29]). The starting point in this case appears to have been in the retroperitoneal glands and the question arises, Were the growths in the bone examples of true metastases or were they due to a similar sarcomatous process starting in the adenoid cells contained in the bone marrow? The case resembles in many respects those of multiple secondary carcinoma of bone described by Fresu[30] and others, particularly in the marked anæmia by which it was accompanied and which was of so profound a degree as to suggest at first a diagnosis of pernicious anæmia. This no doubt was due to an extensive replacement of blood-forming tissue by new growth. The presence of a marked lymphocytosis is also of great interest. A similar occurrence was noted by Strauss[31] in a man, aged 72 years, whose case closely resembled that already described in that he exhibited multiple sarcomata of the bones and lymphatic glands and showed a leucocytosis of 57,600 per cubic millimetre mainly mononuclear in type. The occurrence of some degree of lymphocytosis in cases of sarcoma seems to be not uncommon and would probably be found to occur more frequently if it were carefully looked for. Von Limbeck,[32] for instance, gives a table of cases of sarcoma in which such an occurrence has been observed, notably one of lymphosarcoma in which the white cells rose to 55,000 per cubic millimetre. The increase, he says, "is not wholly one due to the polynuclears but partly also to the mononuclears." It is in cases in which the bones are extensively involved, however, and in which the cells of the growth have direct access to the blood that one would most expect to meet with a lymphocytosis and such cases, if any, merit the designation "sarcomatosis of the blood." Mere periosteal growths, however extensive, do not appear to produce this effect. I have seen, for instance, three remarkable cases of sarcoma in the neighbourhood of the suprarenal in young children attended by extensive periosteal growths in the skull which clinically closely resembled the case described above. Yet in none of these was there any increase in the lymphocytes of the blood and after death the bones were found not to have been invaded. The diagnostic value of lymphocytosis will be referred to immediately.

RELATIONS OF THESE PROCESSES.

I have described multiple tuberculous adenitis, Hodgkin's disease, and lymphosarcoma as types of three pathological processes affecting adenoid tissue in a primary and widespread fashion and the further question now arises are these entirely distinct or do intermediate or mixed pathological types occur? As regards the question of tuberculous adenitis and Hodgkin's disease I have already expressed the opinion that these are entirely distinct and separate and that each of them is characterised by its own peculiar morbid histology. It has also been indicated, however, that glands which have been primarily affected by Hodgkin's disease may become secondarily the seat of tuberculosis and that it is to such secondary or terminal infections that much of the confusion which has hitherto prevailed regarding the identity of Hodgkin's disease is to be attributed. It was also pointed out when discussing the nature of the latter disease that it was possible that it might sometimes be produced by a peculiar and possibly attenuated tuberculous infection, though of this no convincing proof has yet been brought forward. On the other hand, between Hodgkin's disease and lymphosarcoma there is, I believe, no relationship. The morbid histology of the former is quite distinct from that of even the more fibrous forms of lymphosarcoma such as are met with in the mediastinum. Lymphosarcoma is often, though not always, attended by an absolute lymphocytosis which may reach quite a high degree, whereas the lymphocytosis of Hodgkin's disease, though also inconstant, is at best merely relative and due not so much to an absolute increase of lymphocytes as to an absolute reduction in the number of the polynuclear forms. To class Hodgkin's disease and lymphosarcoma together under the title of "lymphomatosis," as some German writers propose to do,[33] seems to me, therefore, reactionary and calculated to retard our real knowledge of each disease and is to be attributed mainly to a failure to recognise the characteristic morbid histology of Hodgkin's disease which has been established by the labours of English and American workers.

When we turn to consider a possible relationship between the diseases just described and the leukæmias dealt with in the last lecture we are on more uncertain ground. In discussing the use of the term "pseudo-leukæmia" as a substitute for "Hodgkin's disease" I had occasion to point out what confusion it had caused. This confusion is largely due to the fact that such a term as pseudo-leukæmia suggests a relationship of Hodgkin's disease to leukæmia which has no foundation in fact. In this connexion much misapprehension has been brought about, in my judgment, by the exaggerated importance ascribed

[28] Discussion on Lymphadenoma, British Medical Association Meeting, September, 1901.
[29] Ueber Lymphosarkomatosis, Wiener Klinische Wochenschrift, 1893, Nos. 12 and 13.
[30] Deutsches Archiv für Klinische Medicin, 1900, Band lxviii., p. 387.
[31] Sarcomatose und Lymphatische Leukämie, Charité Annalen, 1898, Band xxiii., p. 383.
[32] Pathologie des Blutes (New Sydenham Society's Transactions, p. 236).
[33] See Türk, Pseudoleukämie und Lymphosarkomatose, Wiener Klinische Wochenschrift, 1899, No. 4.

by some writers, notably by Pinkus, to the supposed lymphocytosis of Hodgkin's disease. Now lymphocytosis, whether absolute or relative, is, as we have seen, by no means a constant phenomenon in Hodgkin's disease. That cases of true lymphatic leukæmia do occur in which, at one stage of the process at least, there is no *absolute* increase of the total leucocytes must be admitted but in such cases there is notwithstanding a marked absolute increase of lymphocytes, whilst the normal total count is due to a great reduction of the polynuclear forms. The supposed analogy between the blood pictures of the two diseases is therefore fallacious. In addition to this the morbid histology of the two processes is totally distinct, lymphatic leukæmia being a disease which affects only the parenchyma of the glands and adenoid tissue generally, whereas in Hodgkin's disease it is the supporting tissue which is mainly involved. Further, I have met with no case in my own experience either in the child (in whom, as we have seen, lymphatic leukæmia is relatively rather frequent) or in the adult, in which leukæmia appeared to pass into Hodgkin's disease or *vice versâ*, nor have I found any record of such a case in my reading. I think we may safely conclude, therefore, that between Hodgkin's disease and leukæmia there is no relation and that the two diseases belong to totally different orders of pathological processes. I may appear, perhaps, to have laboured this conclusion overmuch, for I doubt not that in this country at least few would be found to demur to it, but one feels bound to protest against the attempts which are being made on the continent to bring so-called pseudo-leukæmia and lymphatic leukæmia together and to look upon them as differing in degree only and not also in kind.

Between lymphatic leukæmia and lymphosarcoma, on the other hand, the possibility of a certain relationship is not so easily to be dismissed. Lymphosarcoma certainly possesses several points of resemblance to the more chronic forms of lymphatic leukæmia. In both we have to do with an overgrowth of the parenchymatous elements of the adenoid tissue, the difference being that in one case (leukæmia) the overgrowth is restricted to the organ primarily involved, whereas in the other (lymphosarcoma) it breaks through into surrounding tissues. The blood picture of the two diseases may also present very similar features. In both there is a profound general anæmia with an absolute increase of lymphocytes which is constant and of high degree in leukæmia, less constant but often very marked in lymphosarcoma. It is probable, however, that the lymphocytosis never reaches the same degree in lymphosarcoma as it does in typical lymphatic leukæmia unless, or indeed even when, the sarcomatous process has started in, and extensively involves, the bone marrow, though on this point we want further information, whilst the locally invasive character of lymphosarcoma marks it off quite definitely from any true lymphatic leukæmia.

One finds a connecting link between the two processes, however, in the disease termed "chloroma." This we may define with Gündel[34] as consisting of multiple green lymphomata localised chiefly in the periosteum and neighbourhood of the bones, especially of the head, and the loose connective tissue along the spinal column, accompanied by hyperplasia of the whole lymphatic apparatus, by lymphoid transformation of the bone marrow, and by a blood picture similar to that of lymphatic leukæmia. In its seat of election this disease presents a close resemblance to such a case of lymphosarcoma as that described above, though with less tendency to local invasion, for the lymphomatous growths of chloroma tend merely to "soak," as it were, along the lines of least resistance, such as the subcutaneous and subperiosteal tissues, rather than actively to invade neighbouring organs, whilst in its affection of the marrow and in the blood picture of which that is merely the reflection it presents a closer resemblance to lymphatic leukæmia. The latter resemblance is rendered still more close by the fact that cases of apparently pure lymphatic leukæmia are occasionally met with in which the enlarged glands exhibit the greenish colour usually regarded as characteristic of chloroma. Of this a well-marked example recently occurred in the London Hospital and others have been recorded by Byrom Bramwell[35] and Lindsay Steven.[36]

[34] Ueber das Chlorom und seine Beziehungen zur Leukämie, Virchow's Archiv, 1903, Band 171, p. 504.

[35] Notes of a Case of Chloroma and of Three Cases of Lymphatic Leukæmia, Scottish Medical and Surgical Journal, March, 1902.

[36] Glasgow Medical Journal, July, 1903.

We have thus, it would seem, in lymphosarcoma, in chloroma, and in lymphatic leukæmia three closely allied processes exhibiting a descending scale of malignancy but presenting many features in common and in the case of chloroma and lymphatic leukæmia at all events possibly tending to pass into each other. Of these lymphatic leukæmia is often met with in infancy, chloroma is more characteristic of childhood and adolescence, whilst lymphosarcoma tends to occur rather in the later periods of life.

I have now passed in review the most outstanding of the disorders which affect the blood and blood-forming organs in early life and it may be well for us to cast a glance back over the ground which we have traversed and to survey it for a moment as a whole. It will have been observed that the blood disorders of early life differ from those of more mature years mainly in exhibiting less definition of type. Such comparatively clear-cut disorders as pernicious anæmia, chlorosis, and myelogenous leukæmia—disorders, in a word, of the bone marrow—occur rarely, if at all, in infancy and early childhood, whilst several secondary anæmias and infective leukæmic and sarcomatous processes affecting adenoid tissue are relatively common. Peculiar to infancy is one type of anæmia only—namely, that which I have spoken of as anæmia splenica infantum, a variety which is in close relationship in its slighter degrees to the secondary anæmias, whilst in its severer manifestations it approximates to the type of the leukæmias. This affection, indeed, epitomises in itself all the peculiarities of the anæmias of infancy, exhibiting on the one hand the marked destruction of red cells with the ready appearance of nucleated forms which characterises the severer secondary anæmias of this age, whilst on the other it shows by the tendency for the non-granular cells in the blood to be increased that reaction of the adenoid tissue to unfavourable influences which is a striking peculiarity of childhood. The ease with which secondary anæmia develops in early life we have seen to be due in part to great vulnerability of the blood cells and in part to the poverty in hæmoglobin which seems to be natural to this period of life, whilst the special character of that anæmia—namely, the readiness with which normoblasts appear in the blood stream—may perhaps be ascribed to the restricted area of the red-cell forming tissue possessed by the infant. It must be remembered, also, that to many influences specially destructive of blood or inimical to its formation the period of infancy is peculiarly exposed. Amongst such influences are defective diet—in particular a diet deficient in proteids and in iron—chronic gastro-intestinal disorders, the syphilitic cachexia, and various infective processes with their resulting poisons. The tendency for the adenoid tissue to react in all the severe anæmias in infancy, with the consequent appearance of an excess of leucocytes in the blood stream, I have tried to correlate with the extensive development of that tissue in the first two or three years of life and with the active functions which it appears to discharge. The nature of these functions were briefly discussed, it will be remembered, and the suggestion was made that the activity of the adenoid tissue may be related to the processes of nutrition and growth. This very activity and extent of the adenoid tissue, moreover, seem to render it specially obnoxious to infective, leukæmic and malignant processes, whence the frequency of Hodgkin's disease, lymphatic leukæmia, chloroma, and lymphosarcoma in the earlier years.

At various points throughout these lectures I have had occasion to comment upon the absence of sharp differentiation between the different types of anæmia in early life. It was shown that the splenic anæmia of infancy tends to fade off at the lower end of the scale into the severer forms of secondary anæmia and at the upper into the leukæmias. It was pointed out, too, that forms of anæmia occur in early life which partake of the characters both of the lymphatic and of the myelogenous type, whilst between lymphatic leukæmia, chloroma, and lymphosarcoma fixed boundaries can hardly be drawn. This indefiniteness of type, it has been suggested, may be merely the reflection of an equal want of definition in the function of the various blood-forming organs in early life and of an incomplete division of labour amongst them. At all events, it may well be that, even although the differentiation of function on the part of the blood-forming organs in infancy is fairly complete in health, yet under adverse conditions a reversion may take place more easily than in the adult to the primitive conditions which obtain in the fœtus. In these circumstances the territorial distinctions tend to be lost, the mother-cells of the

bone marrow (myelogonia) no longer producing merely myelocytes and those of the adenoid tissue (lymphogonia) lymphocytes, but both myelogonia and lymphogonia combining to produce that species of cell the demand for which in the blood stream is greatest at the moment. It is in this direction, I believe, that further study of the blood disorders of early life is likely to lead to results which will materially modify our conceptions as to the processes of blood formation in general.

In conclusion, I would say that no one here can feel more acutely than myself the many shortcomings of these lectures and how unworthy they are of this audience and this place. I have tried to deal with a subject of great difficulty and often of great obscurity and in looking back I fear that I have been able to illuminate it but little. I shall not have wholly failed, however, if I have succeeded in bringing into clearer prominence the peculiar nature of the problems presented by a study of the blood disorders of early life and in suggesting lines of fruitful work for future investigators. In any case I can only hope that the kindness which called me to this position, for which I wish to return my sincere thanks, will be equal also to the task of overlooking the poverty of my efforts to fulfil its obligations.

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The Erasmus Wilson Lectures

ON

ACUTE INFECTIVE GANGRENOUS PROCESSES (NECROSES) OF THE ALIMENTARY TRACT.

Delivered before the Royal College of Surgeons of England on March 21st, 23rd, and 25th, 1904.

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LECTURE II.[1]

MR. PRESIDENT AND GENTLEMEN,—In this lecture examples of the action of micro-organisms in producing gangrene or necrosis of the gut will be brought forward. It is, of course, difficult to be quite sure that such an activity is entirely independent of any interference with the blood-supply. But as we are thoroughly conversant with the action of such micro-organisms to produce boils, carbuncles and so forth on the exterior of the body it seems scarcely necessary to invoke the additional aid of a vascular lesion when considering the internal surface. The action of micro-organisms has already been introduced to you in the first lecture when the acute gangrene following the embolism of a visceral vessel was under consideration. As acute infective necrosis or gangrene will be much more familiar to you in appendicitis it will be considered first and I hope to impress upon you the fact that the pathological process is in all probability the same whether it is in the appendix, the stomach, the duodenum, the cæcum, the rectum, strangulated herniæ, or elsewhere—that is to say, it is a necrosis of the walls of the gut due in the main, or entirely, to the action of micro organisms.

[The first section of the lecture dealt with appendicitis, intestinal suturing, the formation of fæcal fistula, appendix abscesses, &c.]

ACUTE INFECTIVE NECROSIS IN STRANGULATED HERNIÆ.

In the St. Thomas's Hospital Reports for 1900, published in 1902, I wrote an elaborate paper on the occurrence of gangrene in strangulated herniæ in which it was endeavoured to show the relationship which exists between the results of interference with the blood-supply of the ensnared bowel and those of the action of micro-organisms. The great importance of the latter agents was emphasised by the recording of a case in which gangrene or necrosis of the bowel occurred in an example of strangulated femoral hernia within 24 hours of the onset. This class of gangrene, or, better, acute infective necrosis, as it is due to the action of micro-organisms, was likened to an attack of gangrenous appendicitis or the perforation of a gastric ulcer. The study of the pathology of these hernia cases led to the application of the same principle of infective necrosis to the acute diseases of other parts of the alimentary tract and so to the formation of the subject matter of these lectures. I do not intend to reproduce the subject matter given in that paper on account of the large amount of other material to be dealt with in this course. But since that paper left my hands further facts which bear on the subject have come into my possession. These I shall put before you and so now merely enlarge on the work already published.

The practical importance of the subject of acute infective necrosis of the bowel is very great, both in its influence on the treatment and the diagnosis; besides, it changes the prognosis very considerably, though if recognised and treated properly the prospects are, on the whole, very good. As this subject is one which is of great interest, a great deal of attention has been paid to it. It must be confessed that I have seen some patients submitted to the more severe operation of resection of the bowel and anastomosis, both at home and abroad, who never required that operation at all. And again, in a prolonged study of the literature the same point has struck me. And though I am urging the early and wide resection of the bowel and anastomosis in cases of acute infective necrosis, I must confess that the statistics and statements in the literature on the subject are even to a far larger extent than may be thought quite unreliable. The gut which one surgeon regards as gangrenous is deemed recoverable by another and who is to judge?

In order to aid a better selection of cases, the signs of gangrene by which I believe this acute infective necrosis is recognisable are reproduced from my paper and are contrasted shortly with those ordinarily given for its recognition in strangulated herniæ. In this way I hope to define the position which has been taken up so as to avoid the slur, to put it mildly, of excessive surgical zeal. The bowel in these cases is dark or black in colour; the stricture is so tight that in the production of the strangulation both arteries and veins may be almost or even completely and simultaneously occluded. Two things result from this: First, the sac almost invariably contains little or no fluid; and, secondly, the gut is not œdematous or doughy, as is taught. On the contrary, it is thin, inelastic, and does not recover its shape when deformed, as it easily is. Its surface may glisten as the empty condition of the vessels interferes with the inflammatory dulling or glazing of the peritoneum covering it. It contains blood if the initial vascular strangulation has been incomplete; no gas is present within its lumen, having been absorbed by the extravasated blood. There may be signs of local peritonitis on the sac rather than on the bowel, as evidenced by dulling, glazing, &c., or a perforation of the bowel may be present. This necrosed bowel differs very markedly from that ordinarily described on account of the different method of its production. The necrosis is the result of the combination of tight strangulation and the subsequent action of micro-organisms. The above described signs are evidences of the former factor almost alone.

Examples are given in the paper in the St. Thomas's Hospital Reports, 1900, pp. 347-49, which illustrate the following clinical types: 1. A local infective peritonitis in the hernial sac without gangrene of the gut, due to the diapedesis of organisms. 2. A general infective peritonitis after the reposition of the bowel in the abdomen and without gangrene of the strangulated loop, also due to the diapedesis of organisms. 3. The occurrence of general peritonitis and gangrene of the strangulated loop after the return of apparently healthy bowel to the abdomen. 4. The occurrence of gangrene of the bowel in strangulation of intestine, both internal and external to the abdominal cavity, within 24 hours of the onset of symptoms. 5. The spreading character of this pathological process. 6. The greater tendency of the necrobiotic process to spread upwards—i.e., in the distended bowel above rather than downwards in the collapsed bowel below, the strangulating agent. To the first two of these illustrations I have little noteworthy to add and so to save time and space will pass on to the third point at once. The case in which gangrene occurred after the apparently healthy piece of bowel at the operation had been returned to the abdomen is so emphatic and remarkable that it is worthy of reproduction.

Case of acute infective necrosis in a strangulated femoral hernia.—A woman, aged 42 years, was operated on for a femoral hernia of the right side which had been strangulated 12 hours. The knuckle of small bowel looked in perfect condition in every way to be returned to the abdomen. It was of normal consistence, elasticity, shiny peritoneal coat, and so forth. In fact, according to the views which were then held, there was not a moment's doubt as to its being replaced in the abdomen. On the fourth day after the operation she died. Dr. W. S. Coleman, who performed the

[1] Lecture I. was published in THE LANCET of May 14th, 1904, p. 1334.

necropsy, showed me the coil, which had been ensnared, completely gangrenous.

This instance was the first of the kind which I had met with and the occurrence of gangrene of the bowel after 12 hours' strangulation offered much food for meditation and reflection. In the first place, I believe the necrosis was due to the action of micro-organisms, but a secondary phlebitis, and consequent thrombosis of the mesenteric vessels, may have played a part which may also have been due to the micro-organisms. The vessels were certainly not completely occluded at the time of the operation as the bowel quite distinctly improved in colour after the edge of Gimbernat's ligament had been divided and the constriction relieved. The thrombosis most probably had origin in a vascular inflammation or angeitis—that is to say, the involvement of both arteries and veins, probably due to the action of organisms which had migrated from the bowel. So far as is known thrombosis of vessels after the reposition of the loop of intestine in the abdomen is far from common, but there are always a certain number of cases in which the gut has been returned and subsequently becomes gangrenous. Little attention has ever been given to these cases as the post-mortem examinations are usually conducted by physicians, and surgeons are apt not to lay stress on these fatalities.

In the paper in the St. Thomas's Hospital Reports to which I have so often referred, a table was constructed showing how often this occurred (p. 561) and is reproduced here.

TABLE I.

Variety of strangulated hernia.	Number of cases.	Number in which the gut became gangrenous after its return to the abdomen.	Percentage.
Inguinal	212	7	3·3
Femoral	181	16	8·8
Umbilical	44	3	6·8
All varieties ...	437	26	5·9

It is not possible to hazard a suggestion as to whether these are due to mistaken diagnoses made at the operation or to a subsequent phlebitis and thrombosis of the vessels in the mesentery involved by the strangulation.

As I wish to direct special attention in these lectures to the instances of acute infective necrosis I would like to mention a few more cases than the two of my own which have already been recorded[2] in which necrosis occurred in the bowel within 24 hours of the onset of strangulation.

CASE 1.—A woman, aged 64 years, had a femoral hernia which had been strangulated for less than 24 hours. Reduction was effected by taxis, the gut necrosed, and the woman died.

CASE 2.—A woman, aged 52 years, had an umbilical hernia which had been strangulated for 11 hours. Reduction was effected by taxis. Death resulted from peritonitis due to necrosis of the gut involved.

CASE 3.—A woman, aged 59 years, had a femoral hernia which had been strangulated for 24 hours. This was reduced by taxis. Perforation subsequently ensued, followed by necrosis of the gut and death.

CASE 4.—A man, aged 59 years, was operated on for a strangulated inguinal hernia which had presented symptoms for 15 hours. The gut was reduced and a "radical cure" was performed. Death resulted from subsequent necrosis of the bowel and early peritonitis.

CASE 5.—A woman, aged 70 years, had a femoral hernia which had been strangulated under 24 hours. Resection of the bowel and anastomosis were performed. Death ensued.

CASE 6.—A woman, aged 64 years, had an umbilical hernia which had been strangulated 24 hours. An artificial anus was made. Death ensued.

CASE 7.—A woman, aged 44 years, had a ventral hernia which had been strangulated 24 hours. Resection and anastomosis were performed. Death ensued.

The above cases have been taken from the surgical reports of the Middlesex and University College Hospitals in order to show that gangrene of the bowel can occur within 24 hours' time at other hospitals than St. Thomas's. They are fatal cases, as most are, otherwise they would have found their way into other literature than hospital reports. It is also of interest to note that three out of the seven were instances in which the strangulated hernia had been reduced by taxis.

[2] St. Thomas's Hospital Reports, 1900.

TABLE II.—*Times at which Gangrene was found in Strangulated Hernia at St. Thomas's Hospital.*

Days of strangulation.	Number of cases.
Under 1 day	2
1-2 days	11
2-3 ,, ...	13
3-4 ,, ...	3
4-5 ,, ...	11
5-6 ,, ...	11
6-7 ,, ...	2
Over 7 ,, ...	9

Gangrene was found in 6·1 per cent. of inguinal herniæ, 19·5 per cent. in femoral, and 25·4 per cent. of umbilical herniæ. It occurred in 14·2 per cent. of all cases operated on. Acute infective necrosis of the bowel is, therefore, not a common disease if defined as the gangrene occurring within 24 hours. In the above it forms only 3 per cent. of gangrenous herniæ, a percentage which is, in reality, far too small to represent any but the most acute action of the micro-organisms. It would therefore not form 1 per cent. of all strangulated herniæ.

In Table III. an attempt has been made to form a list showing the frequency of the occurrence of gangrene within 24 hours of the onset of the strangulation of herniæ at St. Thomas's, Middlesex, University College, and St. Bartholomew's Hospitals, and Bruns's and Maydl's kliniks abroad.

TABLE III.—*Gangrenous Herniæ showing the Frequency of Acute Infective Necrosis.*

—	Number of gangrenous cases within 24 hours.	Number of gangrenous herniæ.	Per-centage.
St. Thomas's Hospital	2	67	3
Middlesex Hospital...	3	12	25
University College Hospital...	6	33	18
St. Bartholomew's Hospital...	2	28	7
Hofmeister	7	27	25
Michel	3	54	5
Total	23	221	10

It is interesting to note that the school (St. Thomas's Hospital) from which the material was obtained for these lectures, and which same material directed attention to this condition of acute infective necrosis, shows the lowest percentage of its occurrence. And the figures from hospital reports are those least biased by the personal equation of the recorder. If we now turn to the literature which has been largely, though not completely, overhauled, it was found that the reported case in which gangrene was found earliest was that of Nove Josseraud. It occurred in the left inguinal hernia of a young man with a congenital sac associated with an imperfectly descended testis. 12 centimetres of the small bowel were resected and anastomosis performed followed by recovery. The duration of the strangulation was only seven hours and the symptoms were most acute. Michel reports a fatal case in a woman, aged 68 years, who had a strangulated left inguinal hernia of eight hours' duration—that is to say, a fatal case of only one more hour of strangulation in an old woman than in Nove Josseraud's successful one in a young man. Besides the case reported in my paper already quoted in the St. Thomas's Hospital Reports, I have operated on another also successfully, which was associated with an imperfectly descended testis as was that of Nove Josseraud.

Case of strangulated inguinal hernia; acute infective necrosis of the small bowel; resection and anastomosis; recovery.—A man, aged 29 years, was admitted to St. Thomas's Hospital on June 26th, 1902, with most severe pain in a left strangulated inguinal hernia of from 12 to 16 hours' duration. There was an imperfectly developed testis on the same side. He had known of the hernia for 15 years and had worn a truss, but as the hernia had not been down for a "long while" it was discarded. It was the first time

the rupture had reappeared when he was brought to the hospital. At the operation the sac contained a very little fluid. About six inches of small intestine had been suddenly expelled from the abdomen, the amount expelled causing immediate and tight strangulation of the loop. The intestine was full of blood, showing that the occlusion of the vessels had not been complete at once. The blood within the bowel had absorbed all the intestinal gases. Owing to the distension of the coil of gut it had twisted on itself, completely occluding everything. The gut itself was thin, sticky, and inelastic; not œdematous, doughy, or offensive. The vessels in its mesentery were thrombosed. About a foot of gut was removed, the resection being most free above the obstruction. An end-to-end anastomosis was made with two layers of continuous silk stitches. The testis was underneath the gut and had a half twist on its spermatic cord. The gland was excised. A radical cure was performed with fine salmon gut. On the second day an enema yielded a good result of flatus and on the fourth day another enema gave a large fæcal result. Feeding by mouth was begun on the fourth day. Healing per primam ensued.[3]

When once this necrotic, necrobiotic, or necrogenous process gets a good start it may extend, especially up the bowel in the part above the constriction. I have already mentioned and illustrated this tendency to extend in the St. Thomas's Hospital Reports, 1900. It is not easy to find records of cases in which gangrene has occurred after resection, as in hospital reports they escape notice and surgeons do not publish them themselves. Nevertheless, Mr. Hewston has recorded one in a woman, 65 years of age, for whom he resected the small gut in a right femoral hernia which had been strangulated four days. The resection had been to all appearance free. But post mortem the bowel was gangrenous for an inch above the line of suturing. There is no record of a case in which the gangrene spread downwards to any extent sufficient to cause any trouble in treatment. It is important that the surgeon should bear in mind this pathological point. Professor Kocher of Berne some years ago pointed out that it is not the amount of gut resected which kills the patient. It might almost be added that it is usually the insufficient resection of the gut which causes the fatal result, an anastomosis having been performed on tissues which were teeming with organisms. Mr. A. E. Barker[4] strongly advocates a wide resection. Mr. Makins in the Transactions of the Clinical Society for 1903 has advocated rather extensive involution of doubtful bowel wall in these cases. And later it has been emphasised by Dr. Crampe[5] of the Königsberg Klinik. This is a most suitable and successful measure in appropriate cases, as both have shown. But its applicability diminishes as the action of micro-organisms over the results of interference with the blood-supply increases. Therefore it will be inapplicable in cases in which gangrene has occurred within a few hours of, or shortly after, the onset of strangulation, whilst it will be most suitable in patchy gangrene about the site of the constriction of the gut and not in œdematous parts of the loop. It is a measure far more applicable to doubtful pieces of gut, as Dr. Crampe has urged, rather than those in which gangrene has already declared itself.

MECKEL'S DIVERTICULUM.

In the foregoing sections of this lecture it has been pointed out that the appendix forms the terminal portion of our great natural intestinal "backwater," the cæcum. Any diverticulum of the intestine forms a cul-de-sac and a somewhat similar backwater. The most constant diverticulum of the human intestine is that described by Meckel which represents the proximal part of the duct connecting the intestine and the yolk sac of the fœtus. This little process arises from the ileum about 30 inches from the ileo-cæcal valve and is present in 2 per cent. of subjects. It differs from the appendix in several most important features which naturally cause the differences in the pathologies of the two tubes. For instance, Meckel's diverticulum is not situated at a place utilised by the products of digestion as a "rest," as the appendix is at the cæcum; its lumen is almost invariably as large as that of the intestine from which it springs, and it is, as a result, well flushed out by the flow of the intestinal fluids caused by the peristalsis of the ileum as well as by its own contractions. There is therefore no stasis of the fæcal contents within the diverticulum nor the opportunity for organisms to luxuriate within it to the same extent as is the case with the appendix. Therefore it is not to be expected that the former will suffer from as many, or perhaps as acute, inflammations as does the latter. These analogies and homologies interested me so thoroughly that an attempt was made to ascertain all the cases in which this blind process of bowel was diseased. The results have repaid the labour and as they have never been collected previously they are briefly reproduced. In all, I have extracted from hospital reports and literature over 300 cases which are arranged in a table (Table IV.).

TABLE IV.—*Diseases of Meckel's Diverticulum.*

Cystic formation, retention cysts	7 cases.
Tuberculous disease	3 ,,
Typhoid ulceration	4 ,,
Chronic inflammation (diverticulitis)	3 ,,
Acute inflammation (diverticulitis)	3 ,,
Ditto, with necrosis or gangrene	11 ,,
Ditto, with perforation	16 ,,
Ditto, with local abscess	3 ,,
Torsion of the diverticulum	5 ,,
Fistula at the umbilicus	20 ,,
Prolapse at the umbilicus	15 ,,
Intussusception	23 ,,
Foreign bodies in the diverticulum	11 ,,
Diverticulum ruptured by a kick	2 ,,
Intestinal obstruction caused by the diverticulum (other than intussusception)	166 ,,
Ditto and volvulus (?)	3 ,,
Ditto and perforation	6 ,,
Volvulus (?)	1 case.
Papillomata	12 cases.
Carcinoma	1 case.
Total	315 cases.

The above list, although it gives all the records that could be found, has the disadvantage of minimising the frequency of the more common affections and magnifying that of those of rarer occurrence. By means of reducing the above catalogue to shorter proportions and giving percentages instead of absolute figures a better idea of the relative importance of the various factors may be gained (see Table V.).

TABLE V.—*Diseases of Meckel's Diverticulum.*

Intestinal obstruction other than by intussusception	56 per cent.
Inflammation, or diverticulitis (American)	13 ,,
Fistula, prolapse at the umbilicus	11 ,,
Intussusceptions	7 ,,
The rest	13 ,,

In the case of this diverticulum the cases described as due to inflammation or diverticulitis (American) bear to those in which the process caused intestinal obstruction other than by invagination the proportion of 1 to 4. In the case of the appendix inflammation is exceedingly common, whilst it is rare for that organ to form a band and to cause obstruction. This great difference is due to the previously mentioned factors which have led to the comparative infrequency of inflammation in the diverticulum and its situation amongst the coils of small intestine which it can easily ensnare and obstruct. But the difference in the relative frequency or infrequency of inflammatory processes in the appendix and the diverticulum is more apparent than real, as the following problem will show, and at the same time teach us to recognise a new and, when the diverticulum is present, a very common disease. For practical purposes the intestinal obstruction caused by Meckel's diverticulum may be regarded as due to the ensnaring of a loop of bowel beneath the process which is adherent by its tip. The regions in which the adhesions have been described are given in Table VI.

TABLE VI.—*Adhesions of Meckel's Diverticulum.*

To the umbilicus	23 cases.
,, ,, anterior abdominal wall	7 ,,
,, ,, posterior ,, ,,	,,
,, ,, mesentery	40 ,,
,, ,, omentum	5 ,,
,, ,, small bowel	7 ,,
,, ,, bladder	1 case.
,, ,, femoral canal	1 ,,
,, ,, pelvis	2 cases.
Total	99

[3] This case was read to the South Hants branch of the British Medical Association at Winchester, 1902, under the presidency of Mr. David Browne.

[4] THE LANCET, June 6th, 1903, p. 1576.

[5] Beiträge zur Klinischen Chirurgie, Band XXXVIII., Heft 2, 1903.

The diverticulum is recorded as being without adhesions in 39 cases but doubtless this condition is not mentioned as often as the presence of the adhesions is because the latter are so frequently the source of trouble, so attracting attention. The question may be well asked, What are the causes of these adhesions? In the first place they may be divided into two kinds, those due to errors of development and those due to inflammation. In the former the process may open at the umbilicus, be connected with it by a cord containing merely the remains of the vitelline vessels, or again, as my friend Dr. S. G. Scott of Leeds has told me, the connexion with the anterior abdominal wall may contain the remains of the same structures. The latter class of case may be due to an error of development, inflammation, or both. But for my purpose they will be considered as being of developmental origin in order that the error, if any, be made on the safe side for my purpose—i.e., of finding too many developmental fixations. The second class of cases arise from inflammatory causes, such as the adhesions to the mesentery, omentum, small bowel, &c. The inflammation or diverticulitis is due to the causes inherent to an intestinal "backwater," as exemplified in an acute degree in the diseases of the appendix, and in a subacute degree those of Meckel's diverticulum. Placing these two classes side by side it is seen that developmental adhesions formed in 30 cases, or 33 per cent.; and pathological adhesions formed in 61 cases, or 67 per cent. The figures emphasise the frequency of what may be called a chronic or subacute diverticulitis—a disease hitherto unrecognised yet far-reaching in its consequences.

Many are the points of interest connected with the pathology of this diverticulum, but there is not time nor, indeed, is this the proper place to enter upon such a dissertation. To return then to the subject of these lectures, acute infective necrosis, 30 cases of perforation and sloughing of the diverticulum have been recorded. As is the case with the appendix the perforations usually occur at the tip—i.e., at the part least completely evacuated. Though in the case of the diverticulum it frequently has a direct blood-supply. These cases are always diagnosed clinically as appendicitis. No primary vascular lesions have been described. The perforations found in Meckel's diverticulum, which have been recorded, exhibit one very marked difference from those found in the appendix—namely, their multiplicity. Mr. Makins described a case[6] with numerous small perforating ulcers of the diverticulum. In the appendix it is very rare that more than one has been seen; in the stomach and duodenum two have been described, very rarely more. It is not easy to explain this peculiarity on the part of Meckel's process.

In the appendix the infection is gross on account of the host of organisms present and the inability of the tube to contract efficiently and to relieve itself of them. In the case of the diverticulum there are probably not the number of organisms present, and, again, this tube can evacuate itself. It would seem that in the appendix the organisms are in the lumen of the tube and in the diverticulum they are imprisoned in the glands, otherwise they would be washed away. Hence in the former the gangrene or necrosis is gross and in the latter it occurs in small, numerous punctate patches. A similar explanation may account for the pinhole perforations occasionally seen in the stomach, duodenum, &c.

Five cases of torsion of Meckel's diverticulum have been recorded, the most extensive gangrene having occurred within 24 hours of the onset of symptoms, whilst the cases have been clinically of the most fulminating type. In the most severe instances there may have been both interference with the blood-supply and the action of virulent micro-organisms. Mr. T. Carwardine[7] has recorded a unique and interesting case which is reproduced shortly.

Case of torsion of Meckel's diverticulum leading to the formation of a retention cyst in a fœtus.—Mr. Carwardine operated upon a male child, two days old, for intestinal obstruction. He found a large meconium-containing cyst of Meckel's diverticulum separated from the ileum by three complete twists which had also obstructed the latter. The torsion must have begun in fœtal life and it was unaccompanied by any signs of inflammation or necrosis in the cyst.

This case is unique as it stands but it possesses additional interest from the point of view of acute infective necrosis or gangrene. Before birth the meconium is sterile and consequently Mr. Carwardine's case becomes an exceedingly rare example of an aseptic torsion of the bowel. Hence the absence of gangrene and signs of inflammation. To form a contrast with this very rare aseptic and, in a local sense, pathologically mild condition, examples are given of two of my own cases in which there was acute infective necrosis of both the diverticulum and the loop of ensnared bowel in intestinal obstruction. The possibility of the occurrence of this double gangrene in the most common form of clinical manifestation caused by this process—namely, intestinal obstruction, which was present in 56 per cent. of all cases—emphasises the importance of the lesions illustrated.

Case of intestinal obstruction by an adherent Meckel's diverticulum; acute infective necrosis or gangrene of the diverticulum and of the ensnared intestine; death.—A male, aged 32 years, was admitted on July 28th, 1901, into St. Thomas's Hospital with the history of three days' acute intestinal obstruction. The abdomen was opened and the obstruction was found to be caused by a diverticulum of the ileum about four inches along and adherent by its tip to the mesentery of the small bowel. Underneath this band a coil of small gut was strangulated and also had twisted on itself, so completing the obstruction. The diverticulum itself was sloughing and was removed, the bowel was tapped and sutured, followed by lavage, &c. A day later the lower segment of the wound was reopened and the ensnared coil was found to have become gangrenous. It was pulled out of the abdomen and Paul's tubes were inserted. Death followed in a few hours.

Case of intestinal obstruction by Meckel's diverticulum; infective necrosis of the diverticulum; post-operative mesenterial thrombosis and necrosis of the strangulated loop; peritonitis; death.—A boy, aged ten years, was sent to St. Thomas's Hospital on Feb. 3rd, 1904, with signs of peritonitis and intestinal obstruction of four days' duration. At the operation the cause of the obstruction was found to be that a coil of small bowel had become ensnared beneath an adherent diverticulum and twisting on itself. The adhesion was to the mesentery of the small bowel. The peritonitis was found to have arisen in part from a perforation of the small bowel at the site of constriction. The diverticulum was constricted over the ensnared loop and its tip was converted into a nearly free gangrenous cyst. The process was removed and the perforation was sutured. The boy died 48 hours later from peritonitis. At the post-mortem examination it was found that the vessels in the mesentery of the ensnared loop had become thrombosed; they were not so at the operation, as this point was especially looked for in view of the post-operative necrosis in the previous case. The thrombosis had spread to the vessels in the mesentery of the ileum below the diverticulum. As a consequence the necrosis in the loop which had been strangulated had extended downward nearly as far as the cæcum. About four feet of bowel were gangrenous at the post-mortem examination.

This case illustrates the post-operative thrombosis of the mesenterial vessels, which was most probably of bacterial origin, the consequent necrosis of the coil which had been ensnared, and the extension of the necrosis downward in the gut with the thrombosis. The gangrenous cyst, half an inch in diameter, at the tip of the diverticulum would very shortly have become separated, and in so doing would in all probability have freed the adherent constricting band and relieved the mechanical obstruction. The case might then have been regarded as a primary necrotic inflammation of the diverticulum. It is almost tempting to suggest that some of the reported cases may have been of such an origin. The idea does not seem to have suggested itself to authors who have written on this subject.

[6] Transactions of the Pathological Society of London, vol. xliv., p. 90.
[7] Brit. Med. Jour., 1897, vol. ii., 1637.

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SOME EXPERIENCES IN THE SURGICAL TREATMENT OF SUPPURATIVE LESIONS OF THE NASAL ACCESSORY SINUSES.

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DURING recent years it has become a well-established fact that a discharge from one of the nasal accessory cavities not only produces well-marked local changes productive of certain definite and troublesome symptoms referable to the diseased areas, but also that the same discharges exercise an evil influence upon the general health and well-being of the patient. These remoter symptoms have been supposed to be due to absorption of septic products which have been swallowed into the stomach and to such causes have been ascribed by Dr. William Hunter certain forms of septic gastritis and some of the graver forms of anæmia. The effect of such absorption upon the higher nerve centres is also well known to those who have to deal with the type of case to which I am about to refer and it reveals itself in a variety of ways. Such statements as "my brain seems in a fog," "constant feeling of weight in the head," "no energy," "frequent depression," and "inability to concentrate the attention," are favourite expressions by which such patients endeavour to describe their feelings. Although the local and general symptoms are well known to those who have given some detailed attention to the diseases of the upper respiratory tract, yet one has reason for believing that to the general body of the profession both the local and more remote symptoms of chronic suppurative lesions in, and around, the nasal cavities are very frequently either not recognised at all or are honoured with no greater evidence of diagnostic skill than is conveyed by that useful term "chronic nasal catarrh."

It has therefore seemed to me worth while to select a few typical cases which have recently occurred in my practice and to use them in illustrating some of the chief symptoms, the diagnostic features, and the method of treatment of some of the commoner suppurative lesions of the nasal accessory sinuses. In order to avail myself of accurate details as to the symptoms, treatment, and more especially of the result of the latter, I propose to make a selection from a series of cases which came under my private notice during last year (1903). During those 12 months there came before me 52 cases of antral suppuration (four acute and 48 chronic), 15 of combined chronic suppuration of the frontal, ethmoid, and antral sinuses, and four in which the sphenoidal sinuses were simultaneously affected with one or more of the last-mentioned group. While the exigencies of space will necessitate the omission of all except the chief points in diagnosis and the main details of treatment, it may yet be hoped that a careful study of the histories of the patients will enable the reader to recognise the nature of such cases when he meets them and thus ensure the first step in enabling him to treat them with success provided only that he has mastered those technical details which are absolutely essential for the efficient examination and treatment of diseases of the upper respiratory passages.

CASE 1. *Acute inflammation of the maxillary antrum.*—The patient, a man, aged 41 years, was seen on April 14th, 1903. He had suffered from pain in the left cheek and over the left eye for five days. The temperature ranged between 99° and 101° F. On the third day a profuse discharge of foul pus flowed from the left nostril and the pains were considerably lessened. Examination of the left nasal cavity by reflected light showed the nasal mucosa to be very congested (compared with the right side) and yellow pus could be seen in the left middle meatus. The canine fossa was tender on deep pressure. On placing a six-volt electric lamp in the patient's mouth and darkening his surroundings the cheek area below the left eye was darker than on the right side. The second left upper bicuspid was "dead." Under "gas" anæsthesia this tooth was removed, the alveolus was perforated in the position of its buccal root, and a silver wire alveolar drainage-tube was inserted. The patient syringed out the antrum twice daily with warm boric lotion for three days, then once daily for three days, next once on alternate days, and finally when irrigation brought away no pus he removed the tube entirely. No recurrence had taken place when the patient was last seen in April, 1904.

The above is a typical instance of acute suppuration of the antrum arising from septic inflammation around the root of a neighbouring tooth. The abscess had burst into the antrum. The case illustrates the rapidity with which the antral mucous membrane can recover itself if the source of septic infection be early removed. The recovery will be hastened by free drainage and irrigation with a warm, mild antiseptic lotion or even with simple normal saline solution.

CASE 2. *Chronic antral suppuration.*—The patient, a single woman, aged 29 years, was seen on May 5th, 1903. A history of 11 months' "stuffiness" in the left nostril and constant suffering from "nasal catarrh" was given. There was an occasional discharge of yellow matter from the nose which smelt like "bad drains." Neuralgia over the left eye was often noticed in the early morning but it passed off by 11 or 12 o'clock. Examination of the left nasal cavity by reflected light showed a canary-yellow discharge in the left middle meatus, the anterior end of the middle turbinal was swollen and red, and the mucosa in the middle meatal region was very œdematous. The purulent discharge was now removed with wool mops and the patient's head placed in such a position that the left cheek pointed upwards; in two minutes the discharge had reappeared in the middle nasal meatus. Transillumination by electric light (*vide* Case 1) gave the same result as in that case. To make certain that the pus came from the antrum a fine sharp-pointed cannula was introduced into the left nostril and passed backwards and outwards to pierce the inner antral wall below the attachment of the inferior turbinal bone. By affixing a syringe and injecting some warm salt water the returning fluid brought away a large quantity of foul pus. Under "gas" anæsthesia the carious second upper left bicuspid and the first molar teeth were removed and an alveolar drainage tube was inserted as in Case 1. Irrigation with a mild antiseptic lotion was ordered. Writing in April, 1904, the patient says that the headaches had disappeared and that the amount of pus had decreased and its fœtor had quite vanished, but a certain amount of purulent matter was still secreted in spite of frequent changes in the nature of the irrigating lotions.

The above is a common type of case which generally sails under the false flag of "nasal catarrh." The continuance of the discharge is almost certainly due to chronic degenerative changes in the lining mucous membrane of the antrum (*vide* Case 3) and a more radical treatment will be indicated if a complete cure be desired. In 27 of the 48 patients referred to, this method of alveolar drainage and irrigation was, or had been, adopted and patiently persevered in for periods varying in different cases from five months to ten years. After careful inquiries it was ascertained that only five had been cured so that they could dispense with their tube, while the rest had to continue the drainage although all their original symptoms were greatly relieved. Hence we may gather that a small proportion of chronic cases will be cured by alveolar drainage, that a much larger proportion will only be relieved, and that as a general rule it will (with certain exceptions) be wise to let all patients have a trial by this method which is at once simple, involves practically no interruption of business, and will greatly relieve, even if it will not cure, all symptoms.

CASE 3. *Chronic antral empyema treated by radical operation.*—The patient, a female, aged 41 years, was seen in October, 1903. For many months she had had marked obstruction to breathing through the left nostril with constant "wearing" pain over the left frontal region. The discharge of pus from the nose was profuse and "soaked the pillow" at night. She had no energy and was always feeling unwell and depressed. Examination was made in an identical manner as for Case 2 and with similar results except that in this patient the left nasal cavity and posterior choana were filled with polypi bathed in pus. The tongue was furred, the complexion was very "muddy," and altogether the patient appeared to be in low health. The second bicuspid and both molar teeth were "dead." It was obviously useless to employ simple alveolar drainage in such circumstances and hence on Oct. 15th under chloroform anæsthesia I performed the following radical operation upon the left antrum. The "dead" teeth having been removed an incision was made over the canine fossa parallel to, and just below, the junction of the cheek and gum. The soft tissues were retracted and a large opening of the size of a sixpenny-piece

was made in the canine fossa. The diseased polypoid antral mucous membrane bulged through the opening and foul pus escaped. The sinus was now carefully and thoroughly curetted, the free hæmorrhage being checked by strips of sterilised gauze moistened with a solution of adrenalin chloride, 1 in 1000. A large hole (almost amounting to the whole inner wall of the antrum) was then made between the antrum and the nose, the anterior ethmoidal cells were curetted, and the polypi in the middle nasal meatus as well as the anterior half of the middle and inferior turbinals were also removed. The antral cavity was lightly packed with a strip of gauze which was removed through the bucco-antral wound next day. Excepting for rather severe neuralgia lasting for eight days after the operation and an attack of influenza ushered in by a rigor three weeks later the patient made a perfect recovery and is now (March, 1904) absolutely free from all her old symptoms and without a trace of pus in the nasal cavities.

The last case is typical of many long-standing antral suppurations and its main features of interest are: (1) the large polypi blocking the left nasal cavity, a result of ethmoidal inflammation secondary to the antral suppuration; (2) the marked improvement in the general health since the purulent focus has been removed; and (3) the complete cure of the local morbid conditions brought about by the radical operation. It was obvious that mere drainage and irrigation of the antrum would not have sufficed to effect any permanent improvement in this patient's condition. To the question, What considerations should guide us in advising a radical operation upon the maxillary antrum? we may answer—1. The appearances met with in the middle meatus of the nose. If in a long-standing case of suppuration polypi be found in the middle meatus then it may generally be assumed that similar chronic degenerative changes are present in the antrum which only radical measures will suffice to cure. I am aware that certain exceptions to this statement might be made, but it is a good working rule nevertheless. 2. When the circumstances of the patient demand a rapid and complete cure of the sinus suppuration.

During the past three years I have had the opportunity of performing this radical operation more than 50 times and I consider it to be one of the most satisfactory which the surgeon is called on to perform. The symptoms which it aims at relieving are very troublesome ones, the operation is, in my experience, practically free from any risk except that of the anæsthetic, the patient need not be confined to bed for more than three or four days, the results are uniformly excellent, and there is no resulting visible scar to detract in the least degree from the relief otherwise experienced by the patient. In the Transactions of the Odontological Society of Great Britain for December, 1903, I have published a series of 33 consecutive cases with 30 verified cures and the three exceptions in which an imperfect result was obtained were not operated upon by the method above described and therefore cannot be said to detract from the value of the radical operation as it is practised at the present time. In the above-mentioned Transactions are the records of two patients, aged 70 and 71 years respectively, who themselves selected the radical measure and recovered without a bad symptom.

Beyond a temporary neuralgia I have only experienced two complications: (1) a mild epiphora which passed off within three weeks and was apparently due to some swelling of the soft parts around the lower end of the lacrymal duct; and (2) a perforation in a high-roofed hard palate arising three days after the operation and gradually enlarging to the size of a green pea. This was easily closed.

CASE 4. *Suppuration of the left frontal, ethmoidal, and maxillary sinuses.*—The patient, a female, aged 33 years, was seen on March 3rd, 1903. She complained that for two years she had had a constant discharge of "offensive matter" from the left nostril and that the nose was obstructed on that side. She suffered from frequent headaches over the left eyebrow and there was a constant feeling of "oppression in the forehead." "Singing in the left ear" and temporary attacks of deafness were more recent symptoms. By the tests already enumerated in Cases 2 and 3 it was ascertained that the left antrum contained pus. It was noticed, however, that even when the antrum had been washed free from pus and the middle meatus had been cleaned by wool mops, yet a purulent discharge quickly reappeared in this situation. It was therefore necessary to determine whether it came from the ethmoidal or frontal sinuses or (what was more probable) from both. Having again cleansed the middle meatus a small wool mop was forced upwards against the lower end of the frontal sinus to prevent any discharge flowing from it, but in spite of this pus gradually reappeared in the middle meatus, a fact which indicated probable suppuration in the anterior group of ethmoidal cells—i.e., those situated below the attachment of the middle turbinal bone to the lateral ethmoidal mass. Having again cleansed this region the afore-mentioned wool mop was removed and pus immediately appeared in the meatus and its flow was increased by passing a probe upwards towards the frontal sinus. In this way the diagnosis of combined empyemata was rendered practically certain.

Operation was performed on March 27th. The patient having been anæsthetised the left posterior naris was plugged with a sterilised sponge in order to prevent the flow of blood into the lower air passages during the operation upon the nasal sinuses. By means of suitable nasal scissors and a cold wire snare the anterior halves of the middle and inferior turbinal bones were removed and the frontal sinus was opened through an incision in the inner half of the left eyebrow, the lower internal limit of the wound being situated a quarter of an inch above the internal palpebral ligament (Fig. 1). Having turned back the soft parts and

FIG. 1.

Curved line of incision for radical operation on frontal sinus.

periosteum a small area of the anterior sinus wall was removed with chisel and mallet. Pus was discharged through the aperture and through it bulged the diseased and swollen mucous membrane. The anterior sinus wall was now completely removed by suitable bone forceps (Jansen's), the diseased mucosa were carefully but completely curetted away (Fig. 2), the fronto-nasal canal was enlarged by means of "burrs"[1] and the anterior ethmoidal cells were also broken down by means of the latter instruments, as well as by sharp ring curettes passed up from the nostril. The bony wound was lightly packed with gauze and a rubber drainage-tube was passed into the naso-frontal canal to preserve its patency until the sinus cavity had later filled with granulation tissue, when the tube was removed (fourth week). The radical operation was then carried out upon the corresponding antrum exactly as in Case 3 and its contents were similar to those described in that case. The after-treatment of the higher sinus consisted in lightly packing it with gauze on alternate days until its cavity was obliterated by granulation tissue, when the fistulous tract maintained by the rubber tube leading into the nose was also allowed to close.

Treated in this way a frontal sinus of average size takes from four to five weeks to heal completely, but the patient can usually leave his bed on the third or fourth day after the operation. The last patient (Case 4) was exhibited

[1] Made for me by Messrs. Mayer and Meltzer.

before the Laryngological Society of London at its meeting in March, 1904. She was perfectly cured of all her symptoms and the scar in the eyebrow was almost unnoticeable.

The above case is of interest in that it illustrates (1) a frequent combination of empyemata; (2) the addition of aural symptoms which disappeared when the nasal condition was remedied; and (3) the very small amount of scarring even when the sinus is totally obliterated. It may here be

FIG. 2.

To show cavity of sinus after complete removal of the anterior wall and of diseased mucous membrane. The dotted line indicates upward extension of the sinus, the anterior wall of which can be easily removed through the usual incision. The diagram also illustrates the incomplete (always) division of the sinus cavity by a bony septum.

mentioned that the amount of disfigurement caused by the contraction of the scar of an obliterated sinus depends entirely on the depth (from before backwards) rather than on the superficial extent of the sinus.

CASE 5. *Chronic bilateral frontal, ethmoidal, sphenoidal, and maxillary sinus empyemata.*—The patient was a female, aged 41 years, who was seen on Oct. 15th, 1902. There was a history of fœtid purulent discharge from both nostrils for ten years, coming on immediately after an attack of enteric fever. She suffered from severe headaches with a "forcing pain" between the eyes and at the back of the head; these pains were always worse in the morning. She also suffered from occasional attacks of giddiness and a dull heavy feeling in the head which rendered her quite unfit for her work. She was constantly tired and low-spirited. The examination conducted on the lines already indicated (Case 4) revealed the implication of all the sinuses in a chronic suppurative inflammation and it was obvious that only radical measures offered any hope of permanent relief. Operation was performed on Jan. 9th, 1903. Both frontal sinuses were operated upon in identically the same manner as detailed in Case 4. In addition the whole lateral mass of the ethmoids and the anterior walls of the sphenoidal sinuses were removed as far as possible by means of ring curettes (Mayer's) passed up from the nostril and guided by means of the sense of touch aided by light reflected from a forehead mirror. On Feb. 2nd both maxillary antra were operated upon as in Case 3 and the after-treatment was essentially the same as in Cases 3 and 4. The patient made a perfect recovery and was shown at the April (1903) meeting of the Laryngological Society of London to demonstrate (1) the very slight scarring after total obliteration of both frontal sinuses; (2) the complete absence of any pus in the nasal cavities; and (3) the curious pearly appearances presented by the posterior walls of the sphenoidal sinuses as seen through the large openings in their anterior walls.

CASE 6. *Bilateral chronic empyemata of the frontal, ethmoid, and maxillary sinuses, also of the left sphenoidal sinus. The maxillary sinuses were only acting as reservoirs of pus for the discharges from the other accessory cavities.*—The patient was a man, aged 60 years, who was seen in October, 1901. He had suffered for seven months from severe neuralgia over the left forehead and a purulent, very foul discharge from both nostrils. He thought the latter dated from an influenzal attack two or three years previously. Examination, carried out as in Cases 3, 4, and 5, revealed conditions almost identical with that described in Case 5, except that in this patient the nasal septum was deflected so strongly to the left side that the higher regions of the nose could not be carefully examined. On Oct. 24th, 1901, alveolar drainage tubes were inserted in both maxillary antra as the patient declined any severer measures. For two years he had irrigated these sinuses with mild antiseptics twice daily and although he said that the discharge of pus was less yet he still used "50 handkerchiefs a week." On June 2nd, 1903, owing to increasing frontal headache and general ill-health, the patient consented to radical operations upon his frontal sinuses and assisted by Mr. C. J. Bond of Leicester I opened both sinuses and destroyed the ethmoidal cells in the manner already described in Case 4. Owing to the patient being very weak under the anæsthetic we were compelled to hurry over the left frontal sinus and I was unable thoroughly to clear the corresponding ethmoidal region so that a small suppurating fistula remained which we remedied by a further operation three months later.

The patient made an uninterrupted recovery from the first operation and it was decided to deal with both maxillary antra a fortnight after the frontal sinus operations. Curiously enough, however, from the day the higher sinuses were operated upon the discharge from the maxillary antra ceased. In other words, during five or six years they had been acting as reservoirs for the discharges from the higher sinuses without being generators of pus. In this respect the antra may be compared with a urinary bladder from which pus ceases to be discharged when the source of the latter —e.g., a calculous pyelitis—has been removed.

Since the above I have operated on three similar cases and such experiences emphasise the advisability in cases of combined empyemata of always dealing first with the higher sinuses rather than proceeding in the reverse direction, as advised by Moure of Bordeaux. It is not a little curious that I have recently examined the nephew of the patient (Case 6) whose sinuses are all similarly affected.

CASE 7. *Combined empyemata of all the nasal accessory cavities, chronic bilateral suppurative otorrhœa, enlarged tonsils, and adenoids.*—The patient, a female, aged 25 years, was first seen in June, 1901. A history of long-continued, very profuse purulent secretion from both nasal cavities, general ill-health, anæmia, lassitude, and depression was given. This was, indeed, a pitiable case, for I did not know where to commence and indeed the risk of operating at all with such septic conditions could not be ignored. After many delays I removed an aural polypus from the right ear together with a carious malleus and incus; also at the same operation the tonsils and adenoids were removed and alveolar drainage tubes were inserted in both maxillary antra. The patient quickly recovered and as a result of antiseptic and cleansing remedies the aural discharge ceased in about five weeks and has never given trouble since. From time to time numerous polypi were removed from the nose but the secretion of pus continued to be very profuse and the patient desired any operation which might hold out reasonable prospects of relief. That it was not a case to venture upon lightly was made patent to me by the fact that when a cannula was passed into the right frontal sinus the injected fluid returned by way of the left nostril, indicating a perforation in the sinus septum. Then again the same cannula could be passed a long way up into the sinus, indicating that that cavity was an extensive one. Consequently on many occasions I tried the injection of anti-septic lotions of varying composition, including iodoform emulsion, but all to no purpose—the discharge continued as freely as when nothing was done.

On Feb. 21st, 1903, I opened both frontal sinuses by the methods already indicated (Cases 4, 5, and 6). The cavities were the largest I had ever seen and extended not only to the temporal regions but upwards for two and a half inches from the root of the nose. They were filled with chronic polypoid degenerated mucous membrane, inclosing several loculated collections of fœtid pus. The sinuses were thoroughly curetted and lightly packed and some idea of their extent may be imagined if it be borne in mind that 23 feet 4 inches of ribbon gauze, two inches in width, were

inserted as a first dressing. After a long and tedious convalescence the external wounds healed and considering the enormous size of the cavities the depression is very slight, and that mainly over the left sinus. Unfortunately, time did not allow of my dealing with the sphenoidal or with all the ethmoidal cells and these still secrete some pus. I trust that some day the patient will allow me to try to make a more perfect result for her.

The chief points of interest in this remarkable case are: (1) the extensive involvement of all the sinuses; (2) the infection of the tympana which occurred 18 months after the nasal symptoms were established; (3) the destruction of the septum dividing the frontal sinuses; and (4) the large size of the frontal sinuses and the curious apparent isolation of many of the abscesses contained in the diseased mucous membrane. Undoubtedly these communicated with the nasal cavity through the fronto-nasal canal or through the ethmoidal cells.

CASE 8. *Bilateral chronic empyemata of the frontal, ethmoidal, and antral sinuses.*—The patient, aged 44 years, was seen on April 4th, 1903. He gave a history of bilateral nasal suppuration and formation of polypi of 24 years' duration. All the symptoms were aggravated by an attack of influenza four years previously. Both frontal sinuses and maxillary antra were dealt with by radical operations, an interval of a fortnight elapsing between the operations on the higher and lower cavities.

The patient made an excellent recovery but the latter was not attained without anxiety on my part because the posterior wall of the left frontal sinus underwent a superficial molecular necrosis. It first became of a dirty greenish-grey colour, then small spicules of bone separated with the dressings, but no complete perforation of the bony wall could ever be observed. Healthy granulations gradually sprang up and eventually the sinus was completely obliterated.

CASE 9. *Empyema of the left antral, ethmoidal, and sphenoidal sinuses complicated by chronic suppuration in the left lacrymal sac.*—The patient was a man, aged 60 years, who was seen in consultation on Sept. 25th, 1902. A history of chronic purulent, offensive discharge from the left nostril of ten years' duration was given. There was some more or less constant pain in a spot which corresponded with the junction of the infra-orbital margin with the ascending process of the maxillary bone. No pus exuded from the lacrymal sac on pressure although the latter caused pain. Ten years previously an alveolar drainage-tube had been inserted into the left antrum and irrigation was carried out for eight years. Two years ago the antrum was curetted on two occasions through a large opening made in the alveolus but there could still (Sept. 25th, 1902) be seen in it a quantity of fungating granulation tissue bathed in very foul-smelling pus. Owing to a marked deflection of the septum to the left in addition to a prominent "septal spur" on this side it was difficult to examine the left middle meatus, but as far as this could be done with Killian's long-bladed nasal speculum the frontal sinus seemed free from disease.

On Sept. 19th, 1903, under chloroform, the radical operation upon the left antrum was performed (*vide* Case 3) and the spur was removed from the septum. As a result of the operation it may be stated: 1. The discharge of pus greatly diminished but a small quantity could always be seen high up in the posterior ethmoidal region and it was very foul. 2. Probably some of this was forced during convalescence into the right antrum because ten days after the radical operation the patient exhibited symptoms of pus in the right antrum. These were speedily relieved by alveolar drainage and irrigation. 3. The pain below the lacrymal sac was not cured and during some bouts of it the left eye watered freely. 4. Further examination during convalescence showed that a small quantity of foul pus escaped from the sphenoidal sinus. I washed out this cavity many times with various antiseptics, including 4 per cent. formalin, but irrigation had little appreciable effect in reducing the amount of secretion. It was now decided that, as the amount of pus from the ethmoidal and sphenoidal cavities was so small compared with the amount secreted before the radical antral operation, that it would be advisable for the patient to go to his old home (near Vienna) for a few weeks' change and if the pain in the cheek and slight discharge did not cease that when he returned to London the question of opening up the sphenoidal and posterior ethmoidal cells should be considered. During his holiday an acute exacerbation of the inflammation in the lacrymal sac occurred and Dr. Müller (Vienna) was consulted, while Professor Hajek examined his nasal cavities. Under local anæsthesia the lacrymal sac was removed and showed evidence of long-continued irritation and inflammation. After this operation the pain already referred to disappeared and the secretion of pus quickly diminished. In December last Professor Hajek, Dr. Müller, and I met in London to discuss the advisability of further operative treatment on the accessory nasal sinuses, but as the patient's condition was so vastly improved we unanimously consented to wait a little longer. The result has been entirely good in that when last seen by me (in February, 1904) he was perfectly well in all respects and without a trace of any pus in the nose.

It is obvious that my radical operation on the antrum, while completely ridding this sinus of its share in the secretion of pus and greatly diminishing the quantity of the latter, did not get entirely to the root of the matter and I must confess to not having suspected the lacrymal sac of any coöperation in the symptoms. The sphenoidal sinus was obviously infected by the septic secretion from the lacrymal sac which seems to have passed backwards through the posterior ethmoidal cells to the spheno-ethmoidal recess, from which direction it could often be seen issuing. It is of practical interest to notice how quickly the sphenoidal sinus suppuration ceased when once the source of infection was removed and such observations should encourage us not to be too ready with active intervention until we have exhausted simpler modes of treatment and given a fair chance to the natural recuperative powers of the diseased sinuses.

GENERAL CONSIDERATIONS.

A brief study of the foregoing cases will illustrate some of the etiological factors in inflammation of the nasal accessory sinuses. For many years it has been recognised that the primary infection may arise from local or more general causes. With regard to the former, septic inflammation around the roots of dead bicuspid and molar teeth forms a very frequent cause of antral suppuration and from this situation the disease may gradually extend into the ethmoidal and frontal sinuses. In the 52 cases from which the above-recorded ones are selected, dead or carious teeth were present in each one and upon the side of the diseased sinus; no doubt in some cases this was a coincidence because only small degrees of caries were present but in a large number the dental trouble seems undoubtedly to have been the cause of the sinus suppuration. Amongst other local causes of sinus empyema may be mentioned the septic discharges arising from unhealthy conditions of the post-nasal and nasal chambers—e.g., suppurating lacunæ of old adenoid growths and decomposing secretion in certain well-marked forms of hypertrophic rhinitis. At the present moment of writing I have under treatment a case of suppuration in the sphenoidal sinus the result of tertiary syphilitic necrosis of its anterior wall.

With respect to the general etiological factors it is a well-established fact that many cases of suppuration date from an attack of one of the specific fevers and of these influenza has played a very prominent part during recent years. Case 5 is interesting in that it undoubtedly arose after a severe attack of typhoid fever.

In connexion with the chronic suppurative lesions with which we are now concerned two important questions demand an answer—viz., What is the risk to life: (1) if the disease be left to take its course? and (2) if operative procedures of a radical nature be undertaken for its relief?

1. With regard to the first question, the risk to life will depend upon the situation of the sinus relative to neighbouring structures of vital importance. In the case of the antrum, aside from the evil influence upon the general health induced by constantly swallowing septic matter, there can, practically speaking, be no danger to life. With empyemata of the frontal, ethmoidal, and sphenoidal sinuses the case is very different and many cases terminating in fatal meningitis have been recorded. So long as the drainage from the sinuses remains free the patient will only suffer from the results of the absorption of septic matter into the general system and the annoyances caused by the nasal discharge, but at any time a severe cold in the head or the increase in size of polypi or other inflammatory swellings may produce a retention of septic products within the sinus and evil possibilities may at once present themselves.

2. The risk to life when operative treatment is undertaken will in the main depend on two factors: (1) the sinus

involved; and (2) the surgeon's familiarity not only with the region in which he is working but also with the many technical details of intranasal manipulation and operation. The maxillary antrum may be operated upon and subjected to very considerable traumatism without any appreciable risk because it is far removed from any vital structures. Quite the reverse holds in the case of the higher sinuses and many fatal results have occurred as a direct result of operative interference. These "regrettable occurrences" have generally followed radical procedures upon the fronto ethmoidal sinuses and in nearly all the cases which I have been able to investigate (including two of my own) the cause of failure may be summed up in two words—viz., deficient drainage.

After having given a fair trial to the many methods which have been advocated for the treatment of chronic empyema of the fronto-ethmoidal sinuses, I am in entire accord with those who maintain that only complete obliteration or destruction of the bony cavities offers any prospect of a permanent radical cure. In the case of the frontal sinus the anterior bony wall should be entirely removed and any recesses of the sinus thrown into the main cavity by the breaking down of partition walls. Especially will this be necessary in those instances where certain suppurating ethmoidal cells extend outwards immediately below the floor of the frontal sinus and are only separated from it by a thin, almost transparent septum of bone. Furthermore, the fronto-nasal canal must be enlarged and suppurating anterior ethmoid cells in its immediate neighbourhood must be carefully broken down or reinfection of the higher sinus will occur. Having proceeded thus far the latter cavity should be lightly packed with sterilised gauze which can be changed on alternate days until the obliteration of the sinus by granulation tissue is complete. From the moment the operation is completed the motto of the surgeon must be, "Free, unhindered, spontaneous drainage," and if he secures this he need never fear that any serious harm will come to his patient.

The treatment of ethmoidal and sphenoidal suppurations will demand from the surgeon a practical familiarity with intranasal operations and technique and without having acquired these he and his patient will probably be disappointed with the result of surgical intervention. Generally speaking, operative manipulations in the ethmoidal region will be safe when they are carried out below the level of insertion of the middle turbinal bone and much excellent information may be gained as to the progress one is making by the frequent examination of the diseased area with the tip of the little finger passed upwards through the nostril. In this way the limit between soft chronically inflamed (rarefying osteitis) and firm healthy bone can often be ascertained. In most operations upon the ethmoidal (and frontal) sinuses it will be a great advantage to remove at least the anterior half of the middle turbinal bone as a preliminary procedure not only because it is often itself chronically inflamed but the absence of this structure will enable the surgeon to deal more easily with the lateral mass of cells and free drainage will be secured during the after-treatment. A dangerous area is reached when instruments are used above the level already mentioned, for here we are in close proximity to the cribriform plate.

The sphenoidal sinus is best reached through the nasal cavity and it will nearly always be necessary first to remove the middle turbinal bone. In dealing with this deep-seated sinus the surgeon must make use of a bright reflected light and thoroughly define the anterior sinus wall and its ostium before he commences removal of the same. Operations upon this sinus and the posterior ethmoidal cells are best carried out under the influence of cocaine (20 per cent.) anæsthesia, and the most suitable instruments for breaking down the thin bony structures in these regions are Hajek's series of hooks. The inside of the sphenoidal sinus should never be curetted, for if a large opening be made in the anterior wall suppuration will generally cease if the cavity be frequently cleansed with mild antiseptic lotions. Curettage of the inside of the sinus, and especially of its upper and outer walls, may prove to be a very dangerous procedure. Those who have had much experience in operating upon the sinus will agree that it is much easier of approach than would at first thought seem probable. The opening in its anterior wall should always be made as large as possible, for it exhibits a very marked tendency to contract.

From what has preceded it must, I think, be conceded that there is no mystery in the surgical treatment of the suppurative lesions of the nasal accessory sinuses. On the contrary, only in so far as the surgeon bases his treatment on the fundamental principles of surgery can he look for a successful result of his intervention. In one sense only can the subject be regarded as "specialised" and that is in the matter of the technique which is rendered necessary by the peculiar anatomical and physiological characteristics of the regions themselves. For these reasons a variety of special instruments and methods of examination are absolutely essential. If, however, the surgeon can spare sufficient time for perfecting himself in the manipulations necessary for the investigation of the diseases of the nasal accessory sinuses the resulting advantages should be threefold—viz., to the surgeon himself will be opened up a subject of fascinating interest and of great possibilities, to the patient will the prospect of relief from suffering be enhanced, while surgery will continue in no small degree the advancement of its science and art.

NOTE ON THE VALUE OF HOT-WATER INJECTIONS AS A SUBSTITUTE FOR NUTRIENT ENEMATA IN THE TREATMENT OF GASTRIC ULCER.

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FOR the last 18 months I have treated all cases of gastric ulcer requiring rectal feeding by enemata of plain water at the temperature of the body with results sufficiently uniform and satisfactory to be worth recording. I do not propose to discuss the indications for rectal feeding but rather to compare the results obtained when plain water is used instead of beef-tea, milk, eggs, starch, and the many other foodstuffs which are employed in concocting the four- or six-ounce enema which has become consecrated by usage in the treatment of these cases.

It is generally held that the rectum is capable of absorbing well (1) peptone; (2) white of egg, especially with salt added; (3) raw beef juice; and (4) starch and sugar and, to a far less extent, milk proteids and gelatin. It is also common knowledge that patients can be kept alive by this method of alimentation in comparative comfort for several weeks. But the comfort is only comparative. Relief from gastric pain and vomiting is usually prompt, but very soon other symptoms, attributable mainly to the rectal feeding, make their appearance. Of these the first to arise and the most important is thirst. Nor is this surprising seeing that the total amount of fluid given per rectum in the 24 hours varies from 16 to 40 ounces at the outside. It is usual to relieve thirst by allowing the patient to sip a small quantity of hot water from time to time, or to suck ice, or from half a pint to a pint of warm water is injected into the rectum once or twice in the 24 hours. This last method is the best but it has the drawback of increasing the total number of enemata and thereby the risk of rectal intolerance.

Ice by the mouth should, in my opinion, always be avoided. It often fails to quench the thirst and it is difficult to limit the amount taken. I have long since given up the use of ice in the treatment of gastric ulcer except in an ice-bag over the epigastrium, suspended from a cradle so as to insure the lightest possible contact, for the relief of pain. Sipping hot water undoubtedly relieves thirst in some cases, but as the primary object in the treatment of this condition is, so far as possible, to secure physiological rest for the stomach, I think this is best achieved by giving nothing whatever by the mouth for the first few days, at all events, and this can only be done by administering a sufficient quantity of water per rectum to prevent thirst from becoming urgent.

Another symptom which occurs in the course of a few days, I believe in all cases where the enemata contain beef-tea, is an unpleasant taste of beef-tea in the mouth not infrequently associated with a feeling of nausea. This symptom is sometimes very distressing.

By substituting ten-ounce enemata of plain water at a temperature of 100° F. for the smaller nutrient enema at present in general use it is possible to prevent thirst altogether in the great majority of cases and to do away entirely with the unpleasant taste in the mouth.

I am informed by my ward sister, to whose careful observations I am largely indebted, that since we have adopted the plain-water enemata the patients have been altogether more comfortable and much easier to manage than under the old *régime* of small nutrient enemata. I am quite satisfied that the general condition of the patients is at least as good, if not better, and that recovery takes place as quickly, and I may add that since I first adopted this treatment in November, 1902, I have not once had occasion to order a nutrient enema and have not once met with an untoward symptom in any of my cases.

It is a good plan to begin with a five- or six-ounce enema, increasing the bulk each time by one ounce until ten ounces are easily retained. I have not found it necessary to go beyond this. The enemata are given every four or six hours according to circumstances. In most cases it is possible to supplement the enemata by giving small quantities of peptonised milk by the mouth before the end of a week but in several instances my patients have had nothing whatever by the mouth for ten days or a fortnight, and in one or two cases for nearly three weeks, without making any complaint or giving any indication that they were any the worse for their prolonged abstinence. To sum up, the method here advocated gives results at least as good as the ordinary nutrient enemata. It is far simpler to carry out, it is decidedly more bearable for the patient, and incidentally it does away with the unpleasant and offensive daily wash out.

The results obtained with enemata of plain water suggest some interesting reflections on the value of the foodstuffs of the ordinary nutrient enema and the absorptive power of the rectum but this is hardly the place to discuss these points.

Chandos-street, W.

ANKYLOSTOMIASIS.[1]

BY J. CHRONNELL, M.R.C.S. ENG., L.R.C.P. IREL.,
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THE subject of my paper is, it seems to me, one that must peculiarly appeal to a medical society situated in a colliery district. The disease ankylostomiasis is one that the majority of the members can know little of and that only from reading. I find in Taylor's "Medicine," sixth edition, 1901, that the disease is unknown in England and in the second edition of Quain's "Dictionary of Medicine" the same appears, so we err in good company. My own attention was first drawn to the matter about 12 months ago in connexion with the appearance of the disease in Cornwall and since then I have taken a deep interest in the subject and have done all I could to interest others. I take it we may at any time have to deal with the pest and those of us with colliery sick clubs will have to give freely their time and labour in curing the victims of the ailment. It is difficult to cure and the ankylostomum duodenale once introduced into a colliery is very difficult to destroy. In England the Government, the colliery proprietor, and the collier through his union have seriously taken up the subject. The *Colliery Guardian* sent a commissioner (Mr. Salter) to study the disease in Westphalia and his report is issued as a supplement and a second edition appeared about a month ago revised by Dr. Haldane. The latter was sent to Westphalia and Cornwall by the Home Office and his reports have been issued as blue-books. About three weeks ago the Home Office issued a memorandum on the mode of detection of the ovum of ankylostomum duodenale.

You will notice the first paragraph begins: "It is considered by Dr. Haldane not improbable that worm disease already exists in other mines in Great Britain besides those which are infected in Cornwall." My own opinion, and I advance it in all humility, is that we have had it in our own district, if not present now, but that fortunately for us the ovum did not find a suitable nidus—viz., air, moisture, and a temperature over 60° F. We have collieries here in which we could find some, if not all, of these requirements.

[1] Presidential address read before the Wigan Medical Society on April 14th, 1904.

The ankylostomum is a nematode worm, the male being one-third of an inch long and the female about half an inch long; it infests the jejunum and not the duodenum. The female lays an enormous number of eggs which can only become larvæ after their discharge in the fæces. Then, with a high temperature, absence of sunlight, presence of oxygen, and moisture, the eggs hatch in a week, producing free larvæ. Experimentally it has been proved that ova and free unripe larvæ are, when swallowed, unable to develop into adult worms. In a matured stage they become productive on entering the small intestine. Antiseptics so far are of very little use. Deprived of oxygen or exposed to sunlight they die. In ordinary water they live for long periods but drying kills them at once. Dr. Stockman says they live for about six years. The human intestine is its only known host.

The symptoms of the disease are those of anæmia in a serious form: pallor, palpitation, dizziness, dyspnœa on exertion, loss of appetite, and sometimes diarrhœa or melæna. In Cornwall an irritable pustular skin eruption, locally known as "bunches," has been found. Though not often fatal it will be easily understood why the afflicted are incapable of work. I ought to mention here that a great number of men have been found to be infested with the worm and yet show no symptoms of anæmia—a fact that tends to confirm my own impression that men returning from service in India, Egypt, and South Africa must have brought the worm here. It is recognised that these men constitute an almost equal danger with the others. Until very recently we were led to believe the pallor of the body was due to hæmorrhage and the worms sucking the blood from the intestine. Dr. Haldane and Dr. Boycott, in the *Journal of Hygiene*, prove that it is not so. Measurements made by them show the anæmia to be due to a great increase in the total volume of the blood with a corresponding dilution of the hæmoglobin and in consequence the fainting, dizziness, and palpitation are caused by the defective aeration of the tissues, and the heart in particular, the condition being analogous to that of poisoning by carbon monoxide.

I need not go into the treatment, which in England has been thymol and in Germany male fern, though a number of other drugs have been tried. What we ought to do is to try to improve the sanitary conditions of our collieries. You all know that underground, with a very few exceptions, nothing is done. A collier is free to go where he likes. He fouls his hands and eats his food at his work and indeed often enough at home he will not wash them before taking his dinner. No one asks that he shall have a lavatory in his working place but he ought to have suitable pails placed at convenient points in and about the workings. The pails should be brought to the surface daily and their contents burned in the furnace, run into a cesspool, or spread on the land. A great number of closets, water-closets where possible, must be provided on the surface and possibly some day there may be a bath on the surface. In Germany every collier has to have a bath at the colliery and to change his working clothes for others before he is allowed to leave the works. Lastly, I contend that every colliery ought to have a supply of pure fresh water not only on the bank but in the pit. How many times have you seen wounds that have been washed with tea because no other fluid was to be had.

Hindley.

TRANSPLANTATION OF TENDON FOR MUSCULO-SPIRAL PARALYSIS.

BY H. M. W. GRAY, M.B., C.M. ABERD., F.R.C.S. EDIN.,
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THE following case presents some remarkable and interesting facts.

A boy, aged 16 years, fractured his right humerus and by a fall during convalescence the fracture was made compound. Thereafter the musculo-spiral nerve became included in the callus. To free this, operation was performed and apparently, judging from the resulting paralysis, the nerve must have been severed during the manipulations. Further operations were done to improve matters but without success. Two years after the last operation the boy came under my care. At that time musculo-spiral paralysis was complete. He

could not extend the fingers or thumb at the metacarpo-phalangeal joints in the very slightest degree, although, as usual, the terminal phalanges could be extended by the action of the interossei and lumbricales. The fingers were fully flexed on the palm and the wrist was also flexed. He could not supinate in the least when pronation was complete but if the forearm and hand were placed midway between pronation and supination, supination could be carried slowly and feebly to almost the full extent (by the biceps). The flexors and pronators were all normal.

I exposed the tendon of the flexor carpi ulnaris by a longitudinal incision over it, cut it across just above the pisiform bone, and detached a few of the lowest fibres of the muscular attachment to the ulna. I made then an oblique incision over the back of the forearm, reaching downwards as far as the level of the wrist-joint, and separated out the common extensor tendons. A tunnel close to the ulna was made through the interosseous membrane, just above the upper border of the pronator quadratus, a forceps was passed through this from back to front, and the tendon of the flexor carpi ulnaris was pulled through. Hyperextension of the fingers and wrist was made, the extensor tendons were cut across just above the level of the wrist-joint, and the distal parts were sutured to the end of the flexor carpi ulnaris tendon. The wounds were closed and the elbow-joint, forearm, and hand were enveloped in dressings and plaster-of-Paris, the wrist and fingers being fixed in the hyperextended position and the elbow flexed.

I expected that the boy would have to be educated to attempt to make ulnar flexion at the wrist when he wished to carry out extension of the fingers. At the end of three weeks after the operation, when the dressings were removed, the wounds were soundly healed. I flexed the fingers cautiously and then asked the boy to straighten them. To my surprise he did so at once and to the full extent. I leave physiologists to explain *why* a flexor nerve and muscle should, in the circumstances, respond so quickly to extensor impulses. The boy told me that he had tried to move the fingers under the plaster but I had not indicated to him how the movement of extension was to be produced. This was all the result I expected, but I found that the boy could now supinate, even though the forearm was previously fully pronated, and that supination was more complete than before. These movements are now carried out easily and strongly. The boy is so pleased with the result that he does not think it necessary to submit to further operation to give him extension of the thumb. When at rest the thumb lies more or less flexed in the palm. When the boy attempts to extend it it is abducted from the palm, the metacarpal is drawn inwards, and the terminal phalanx is slightly extended, probably from increased tension of its extensor tendon. All this permits the boy to grasp certain objects of narrow calibre without having to place the object in position with the other hand. When he attempts extension of the thumb one can see the tendon of the flexor carpi radialis becoming prominent. This indicated that it could be used to produce extension of the thumb in a way similar to that carried out with the ulnar flexor. What I now wish is to transplant the tendon of the flexor carpi radialis through the interosseous space close to the radius, and then attach to it the severed tendons of the extensors of the thumb at different levels so that extension of the proximal phalanx will be obtained slightly in advance of extension of the distal one. It may be some time before the boy submits to this procedure, so I think it right to record the case now. I have not heard of any similar operation being done for musculo-spiral paralysis.

Judging from the great success which has attended the transplantation of the flexor carpi ulnaris I have not the slightest doubt that transplantation of the flexor carpi radialis on to the thumb extensors will give equally good results. The latter procedure will increase still further the power of supination. I recommend that both should be transplanted at the same sitting. There is no necessity to transplant the pronator teres in order to procure supination (as Tubby has done). This operation diminishes largely the power of pronation. In the operation I recommend two comparatively useless muscles are made to fulfil very useful functions and I feel certain that approximately normal movements will be the final result. Of course, such an operation is superfluous where successful nerve suture can be done.

Aberdeen.

THE RESULTS OF TREATMENT IN 301 CASES OF PHTHISIS BY OPEN-AIR METHODS.

BY DAVID LAWSON, M.A. ST. AND., M.D. EDIN.,
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IT is not without considerable feelings of misgiving on the part of the writer that he has yielded to the pressure which has been brought to bear upon him from various quarters to publish the results of the experience gained during the past three years of sanatorial treatment of phthisis at Banchory, for, as is well known, there exists in the minds of no inconsiderable section of the medical profession, not without fair reason, a well-marked prejudice against statistics of so-called "cures" and the more so when, as in the present instance, the statistics furnished emanate from the not altogether disinterested source of a paying institution. In another quarter he has expressed sympathy with that prejudice in the following terms: "It is therefore plain that if we are to be guided by the evidence furnished by statistics as to the value of the sanatorial treatment in phthisis then we must be prepared to ignore in our calculations those which reach us from paying sanatoria."[1] This statement was made in course of a criticism which was written after having made a careful study of the results published during the previous year by various classes of sanatoriums at home and abroad, for in these this remarkable fact was brought out, that whilst the percentage of cures in the pauper sanatoriums sometimes fell so low as 2 per cent., and in no case exceeded 15 per cent., those claimed by paying institutions invariably amounted to from 50 per cent. to 80 per cent.—in one case to as high as 100 per cent. And yet, notwithstanding these facts, it has appeared to him that, in view of the already large and steadily increasing number both of the profession and of the public whose interest in the subject is undoubted and who are anxiously awaiting the results of the treatment carried out in our own land before they definitely decide to accept or to reject the claim which has been made on behalf of sanatoriums as curative agents in cases of tuberculous diseases, it is his duty to place upon record the results obtained in those specially favourable conditions under which he has been working in the Scottish highlands during the past four years.

Whilst the weight of opinion may incline to the view that for a working basis we ought to found our calculations as to the efficacy of the treatment upon the results obtained in charitable or pauper institutions rather than upon those of wealthier sanatoriums, there is much to be said on behalf of those who hold the opposite view and contend that the results obtained at higher-class institutions furnish the better guide of the two. In considering the matter it is well to remember that sanatoriums for the pauper classes at present in existence in this country consist for the most part of modified mansion houses, located in the vicinity of large towns, run on lines of strictest economy, upon the medical and nursing side wofully understaffed, and sadly deficient in those scientific adjuncts to the treatment which wealth alone can supply. Moreover, the call upon their accommodation is so great that in order to relieve, if even in a small measure, the largest possible number of sufferers they are unable to retain their patients for a sufficiently long time to effect their cure. Indeed, many place three months as the limit of each patient's stay, after which, whether benefited or not, he must vacate his bed in order to make room for another. Contrast with this the case of a better-class institution the site of which in the first instance has been made the subject of careful thought and judicious choice, planned and built altogether irrespective of expense from the very commencement for the special purpose of carrying out open-air methods of treatment, with first-class laboratory and electrical installation, and relatively large medical and nursing staff resident in the building. And add to that the important consideration that its patients are largely drawn from the moneyed classes who come prepared to stay indefinitely so long as there exists the slightest chance of ultimate recovery being attained. It is surely reasonable

[1] Edinburgh Medical Journal, September, 1903.

to expect that in the latter circumstances the percentage of favourable results obtained shall far exceed that secured under the former conditions and as such shall supply a more accurate indication of the possibilities for good of the *régime* in question than can possibly be obtained in the case of the former. It is upon this ground, it is thought, that the facts here published merit careful consideration.

The sanatorium at Banchory was opened in December, 1900, and at once received 20 patients, most of whom had been located in the neighbouring district awaiting admission. Between that time and December, 1903, there were treated and discharged 301 patients in all stages of the disease. No attempt was made to effect a selection of suitable cases. As was the experience in other pioneer institutions in this country, a large proportion of patients altogether unsuitable at first presented themselves for treatment, a fact which goes far to explain the heavy mortality that took place amongst the patients of the first year when compared with those of the two following years.

1. *Deaths.*—Dealing first with the mortalities which have taken place we find that out of a total of 302 patients which have passed through the sanatorium in the period under review 84 of these, equivalent to 28 per cent. of the whole, have died. Of that number 12 have died in the sanatorium itself, mostly, however, in the first year. No death has taken place from phthisis in the institution since October, 1902. One patient died in 1903, but in that instance the death was due not to phthisis but to the bursting of an aortic aneurysm. The fact that 62 out of 84, equivalent to 77·5 per cent. of the whole number of deaths, took place in patients who were admitted during the first year furnishes its own evidence as to the undesirably large proportion of unpromising cases with which one was at first supplied. Happily with a growing appreciation upon the part of members of the medical profession, as a whole, of the limitations of the treatment and of the desirability of advising its adoption at the earliest stage of the disease, the clinical type of case sent in later has steadily improved, until now in the vast majority of instances patients arrive at a time when there is every reasonable hope of their deriving permanent benefit from their stay. It is, therefore, a matter of probability, almost amounting to certainty, that future figures will prove much more encouraging than those which fall to be recorded here. Whilst the figures given represent all deaths which took place within that period, it is well to point out that in the cases of six patients, all subjects of phthisis, the immediate cause of death was due not to tuberculosis but to accidental complications. These were accounted for respectively by: (1) diabetic coma; (2) aortic disease; (3) aortic aneurysm; (4) appendicitis; (5) locomotor ataxia (rectal crisis); and (6) actinomycosis.

2. *Worse or no improvement.*—A large number of those who did not improve or who are now known to be worse are to be found in the class which has preceded this. But of those surviving one is aware of eight who derived, so far as could be judged, no benefit whatever from sanatorium treatment and whose condition is now worse than it was when they first entered the sanatorium.

3. *Improved, but disease not arrested.*—The vast majority of those who have improved have eventually had the disease arrested and so will come under consideration later, but there remains a certain number (13) who, whilst they have improved, still show signs of active disease. These for the most part have gone abroad, hoping to find in the reputed curative properties of foreign climate that factor which will ultimately promote their complete restoration to health. Some, however, have remained in Britain, and, so far as one has been able to learn through correspondence, the progress which the latter are making in no way seems to suffer by comparison with that which others are making in foreign lands. In regard to these cases one's experience abundantly substantiates that of Burton-Fanning[2]: "In no single instance has the course of the disease been materially different after going away than it would presumably have been had the patient remained in his own country."

We pass now to consider the more cheerful aspect of our subject—namely, those cases in which arrest of the disease has taken place. It is convenient to divide these into two classes—namely, (1) those in whom the disease has been arrested and the patient is able to work; and (2) those in which arrest is present but the patient is passing the life under conditions which admit of care being continued to be exercised. In 64 cases, in addition to signs of arrest in the chest, the patient's sputum if present failed to reveal the presence of tubercle bacilli either under the microscope or on inoculation before the patient left the sanatorium, or alternatively the sputum had entirely disappeared. There is a certain number of other instances in which the patients appear to be perfectly well and to be able alike to enjoy the burdens and luxuries of life, yet who occasionally produce a little sputum which on examination reveals the presence of tubercle bacilli.

It has been urged by some whose actual experience of open-air work is limited that the results obtained at sanatoriums in this country are usually unsatisfactory in so far as they are transient and that the patient rarely recovers his health sufficiently to be able to resume his old vocation in life. Indeed, there are many who go so far as to assert that in no circumstances should the patient again return to those conditions under which the disease was contracted. The fact that 111 (or 36·7 per cent.) of those treated during the past three years have now returned to, and are carrying on, their ordinary vocations in nearly every instance in this country is one which goes far to discount the value of that contention. No doubt in many instances the occupations followed are such as conveniently provide the patients with opportunities for continuing to live the life which they learned to live when undergoing sanatorium *régime*. Still there remains a very large number of cases in which, as in the case of lawyers, medical men, and merchants, the continuing of such life is attended with almost insuperable difficulties.

Duration of treatment.—The average term of residence in the sanatorium of these cases has been approximately five months. But it should be explained that here, also, the figures have suffered material modification by the inclusion of those taken from the first year's work. A comparatively large number of patients at first came in order "to learn the treatment" with a view to carry it on in country surroundings elsewhere. The term of residence in many of these cases did not exceed one month. During the past year such cases have rarely appeared, patients now for the most part preferring to remain until they are discharged. The longest period spent by one patient has been 22 months and the average of those discharged in 1903 was seven and a half months.

Weight gained.—The average weight gained has amounted to 16½ pounds. One's belief is that too much has been made in some quarters of mere gain in weight. The patients before leaving have for the most part been required to take considerable exercise, which has usually resulted in the weight being materially reduced below the highest point attained. In view of the fact, clearly demonstrated over and over again, that mere weight without condition is a dubious blessing, the desirability of making fit after signs of active disease have disappeared even at the expense of weight has, to my mind at all events, been conclusively established.

Residence abroad.—Those who have gone abroad fall under two groups. The first comprises a number who having completely recovered their health in this country afterwards went abroad in order to assume posts which their friends had procured for them. These have not gone abroad for purposes of treatment. Nevertheless, persuaded of the signal benefits which the colonies afford, they have gone there with the intention of spending the rest of their lives in the new country, as it appears to hold out to them the combined advantages of good business prospects and a fair chance of long life. The second is composed of quite another type. It is for the most part comprised of cases of old-standing disease, cases in which the disease has at length become to all appearance quiescent, but only after having caused extensive changes in the lungs. These cases find the rigors of winter climate somewhat trying at home and therefore go to sunnier climes where the conditions of life are pleasanter during the winter and early spring months than they are at home. Some, indeed, have settled abroad altogether for this reason. Such patients do not aim at ever becoming robust again; and in choosing this line of action have done so merely because it is the one course which seems to hold out to them the prospect of providing the maximum of comfort and pleasure compatible with prolongation of life. Of those others who are living under careful conditions in our own country many are constrained to do so out of considerations of expense; but some prefer the society of their friends at home to the vaunted climatic advantages which

[2] THE LANCET, August 15th, 1903, p. 455.

expatriation affords and therefore remain at home from choice. But in every case recorded here there is sound evidence that the disease is in a state of arrest.

Heredity.—A point of more than passing interest to statisticians brought out by these figures is the fact that of those who have recovered 98, or 51 per cent., have apparently no hereditary taint, whilst 94, or 48·9 per cent., possess a distinct hereditary burden.

GENERAL LESSONS OF EXPERIENCE.

Residence abroad.—Living in daily and hourly contact with his patients the sanatorium physician enjoys peculiar facilities not only for making and collecting clinical observations over a prolonged period of time and so of advancing our knowledge of the course and treatment of the disease in its manifold forms but through the social relationship which exists between himself and his patients he possesses unique opportunities which are denied to those engaged in medical and consulting practice of ascertaining the views of patients themselves upon the one matter which occupies their minds and attention to the exclusion of others—namely, the treatment of the disease. The information derived in this way from early cases whose first experience of treatment takes place at the sanatorium in quesion is of very minor importance but it is not so in the case of those whose search for health has extended over a period of several years and whose time has been spent abroad in large continental hotels and in districts the climate of which enjoys an established reputation in the treatment of lung disease. Many of these, after spending, it may be, one, two, or three seasons abroad, eventually land in one or other home sanatoriums. As a result of what they learn there and the "results" which they see around them they come to hold the view, rightly or wrongly, that if they had in the first instance been sent to a sanatorium instead of to a hotel they would long since have recovered their health. They had not been told anything to the contrary and they believed that the specific properties of the climate would secure their recovery. They had received no instruction regarding the nature of the life they were expected to lead and in consequence much of their time had been spent in pursuits which whilst they furnished a measure of enjoyment were carried on in surroundings which denied them that very atmosphere which they had gone to seek. Many of those patients hold the view strongly that if phthisical patients are not to be advised to enter continental sanatoriums then they ought to pass a preliminary period in some British institution in order to familiarise themselves with the principles underlying open-air treatment. They come to believe that if they are to derive full benefit from any climate *régime* is essential.

Prognosis.—Another point about which patients are apt to compare notes and to remark upon is the fact that the confident anticipation which had been held out to them that they would be quite well in three months had not been justified by events. From this they infer either that sanatorium treatment is not what is claimed for it or that the medical man had not fully appreciated the extent of the mischief in his case. As patients after they have entered a sanatorium find themselves surrounded by many convincing evidences of the efficacy of the life they are following I fear they more frequently make the second rather than the first inference. In this way the prestige of the medical man is apt to suffer in the minds of the patient. If experience of sanatorium life has taught the writer one lesson more than another it is the unwisdom of venturing to predict the duration of treatment which will be necessary to insure the complete recovery in any given case. In the type of instance here referred to the prognosis had of course been based chiefly or altogether upon the evidence of extent and distribution of the disease in the lung as revealed by physical examination. Early infiltration of one apex, it was assumed, clears up rapidly and a bilateral disease indicated a more prolonged term of treatment. Roughly that may be so but the exceptions are so numerous that he who follows the rule and prognosticates upon this basis will frequently find himself in the humiliating position of being called upon to explain to dissatisfied friends the disparity which has sprung up between promise and fulfilment. Experience has engendered caution. It is my practice now always to decline to express a definite opinion regarding prognosis in any case of phthisis until the patient has been under treatment for at least a month and I feel sure that if medical men in general would follow some such guarded course the charge that residence at sanatoriums sometimes interferes with that confidence which ought always to exist between patient and medical man would become practically unknown and much heartburning would be saved. There is much yet to be written upon the subject of prognosis in phthisis which has not yet seen the light and as it will probably form the subject of a future communication it need not be further referred to here.

Hill-climbing.—So far back as Brehmer's time emphasis was placed upon the special value of hill-climbing in the treatment of phthisis. Since then, however, there has arisen a school which holds a different view and which advocates that a patient should be kept at rest until the lung condition has completely cleared up. Experience here as to the comparative value of the two methods leads one to the strong conviction of the incomparable value of hill-climbing during convalescence when placed beside rest or even exercise on the flat. As a workable basis we have found that it is well to begin hill-climbing on a small way at an early point of the exercise stage. When the patient has reached a point where he is able to walk about six miles at a stretch without any marked temperature reaction appearing then the real hill-climbing is pressed. Latterly, it has been our practice to send the patient at least three times weekly, usually more frequently than that, a climb of about 1000 feet, with a long walk added. In many cases this is increased till it involves a climb of 1500 feet, the patient covering in all anywhere from ten to 20 miles at a stretch. The results obtained in such cases latterly have been so consistently good that one has come to be convinced that hill-climbing supplies a factor of treatment which is of cardinal value and, therefore, in selecting sites for future institutions this is a point to which the very greatest importance should be attached. The writer is hardly called upon to repeat the explanations which have already appeared so frequently elsewhere as to how hill-climbing operates in promoting recovery. But he is of opinion that it is right he should record the fact that his experience of its action has led him to believe that its systematic employment as an element of treatment is absolutely essential if the best results are to be obtained. There is, however, one class of apyrexial case in which he has found evidence that its use does harm rather than good. It should consequently never be pressed in cases of advanced chronic fibroid disease.

Diet.—So much has been done here in investigating the value of different diets and methods of dieting in tuberculosis that that part of the work might itself very well form the subject of a very extensive paper. But as it is unsuitable to deal with it fully now the writer will content himself by recording generally the teachings of experience. The very large diets which are associated with a certain German institution and which have come to be adopted in many quarters in Britain were at once found to be unnecessary and undesirable. Their application was invariably associated with marked dyspepsia and vomiting, weight, however, being usually gained under their administration. It was clearly demonstrated that in the vast majority of cases weight could be put on as fast and in some cases faster by a diet of more moderate amount when the proportion of the relative ingredients had received careful consideration than when a very large mixed diet was administered. In regard to fats, taken all over an average of two ounces of butter per day seemed to attain the best result and only in very few cases (six) where butter was badly borne did cod liver oil furnish a useful adjuvant or substitute. By presenting a larger variety of food and giving a smaller amount of each kind appetite has been well maintained and dyspepsia has become rare. In order to secure proper variety it has therefore been found to be an advantage to depart from the usual two or three course dinner and to give one containing a large number of courses and a moderate amount of each. Bread, butter, and milk in measured quantities suitable to each patient, however, accompanied all meals. In those cases of considerable pyrexia and marked signs of active disease the value of basing the diet given upon information obtained from metabolism investigation conducted in each case has been abundantly demonstrated. In passing it may be mentioned that the presence of various purin bodies in the urine have been found to furnish indications of special value in this line. The number of calories indicated was arrived at and a diet equivalent to that was fixed upon and written out. It has been found that by weighing each meal presented to the patient and the amount taken systematically

day in and day out the patient's progress was more satisfactory than when he was placed upon an average diet. In some cases every meal taken has been weighed over a continuous period of six, seven, eight, and even nine months without intermission. Needless to point out this has entailed an enormous amount of work, but, as has been already said, the improvement in the results obtained has more than justified the expenditure of labour involved. The assistance rendered by the presence of a dental department established in the sanatorium over a year ago has been greater than was expected and has fully justified its presence. Since then dental defects present when a patient entered have at once been remedied before the treatment was begun. In a number of cases this factor seemed to have an important bearing upon the disappearance of dyspepsia which was hitherto present and the continuance of which would certainly have added to the difficulty of treating the cases.

The x rays and high-frequency currents.—The therapeutic value of high-frequency currents and the x rays as applied to lung disease still requires to be established but that both are extremely valuable adjuncts to treatment is a point upon which two years' close observation has abundantly shewn. High-frequency currents find their principal application in those cases of atonic dilatation of the stomach so difficult to treat successfully by other means and yet so commonly met with in phthisical cases. They are of further value in the neurotic type of patients and also in the various neuralgias accompanying the anæmia present in phthisis. A good deal has been written upon the subject of the Roentgen rays with regard to lung disease and no doubt in the near future much more will be done in this direction. It has been customary always to screen and to skiagraph our patients soon after admission after having previously formed an opinion by a careful physical examination of the conditions present, and it has frequently been one's experience to detect by this means conditions which had not been even so much as suspected previously to the x rays being used. Particular allusion is made to four cases of aortic aneurysm recognised within a period of 12 months by this means. As lavage is not infrequently employed in cases of gastric dilatation there were grounds for thankfulness for the revelation which enabled one to avoid what would have proved if adopted in these instances a dangerous procedure. All chests have been systematically examined by screening from time to time whilst patients are under treatment and one has found observations so made on the subject of changes at work in the lesions a matter at once interesting, instructive, and helpful in the matter of treatment. The value claimed for the x rays in the treatment of tuberculous glands has been fully confirmed by the observations made in the few cases which have come under notice. One case of lupus of 36 years' standing has cleared up under its use and at the present moment, over 12 months since the treatment was suspended, appears to be quite well. The x rays have also been applied in several cases of enlarged glands at the root of the lung. The results obtained in those cases, whilst not striking, have been at least encouraging.

Throat cases.—I am unable to give exact figures in regard to throat cases. All the cases of tuberculous involvement of the larynx that have come under my notice have been cases complicating pulmonary phthisis. Throats have been systematically examined and where necessary treated locally. In four cases distinct ulceration of the larynx healed under systematic local application of lactic acid and have remained well.

I gratefully acknowledge the valuable assistance I have received from Dr. Ian Struthers Stewart in compiling this paper.

Banchory, N.B.

GEOGRAPHICAL DISTRIBUTION OF HARE-LIP AND CLEFT PALATE.

BY R. W. MURRAY, F.R.C.S. ENG.,
SURGEON TO THE NORTHERN HOSPITAL, LIVERPOOL.

I WAS anxious to obtain some information regarding the frequency with which hare-lip and cleft palate occur amongst the natives of different countries and last winter I wrote to a number of medical men in various parts of the world asking them their experience in this matter. I have received replies from China, India, Burmah, Straits Settlements, Java, Hawaii, Jamaica, and Central Africa, and as the information so kindly supplied to me may be of interest to others I give a brief account of the results of my investigations.

Dr. R. T. Booth of Hankow writes: "In my experience during five years' hospital practice in Hankow I have operated about six or seven times for hare-lip. This, however, by no means gives an adequate idea of the frequency with which this deformity occurs amongst the natives. I should say that hare-lip is common among the Chinese. In one day I counted four cases as I walked along the main street of this city. The Chinese do not pay much regard to their personal appearance; so long as the deformity does not interfere with their prospect of business success or of marriage they pay no attention to it. Hence the comparative infrequency with which such cases come under our care in hospital. Cleft palate, in my experience, is of rare occurrence; in none of my cases was there any deficiency of the hard palate, and while walking the streets I have sometime stopped and looked at the palate of a hare-lip case but there was no cleft of the palate in any I saw. In one case of hare-lip on which I operated there was an interesting condition of the soft palate and uvula. The formation of the hard palate was complete but there was a well-marked division of the soft palate and uvula: the portions of the soft palate were bridged over by mucous membrane only, which formed a transparent line down the middle of the soft palate; the uvula was bifurcated. This is the only case of any deficiency in the palate I have seen in China."

Dr. Robert Howard, writing from Lake Nyassa, Central Africa, says: "I have never seen an example of hare-lip or cleft palate amongst the natives on the shores of Lake Nyassa. I should be sorry to say that the deformity never occurs, for if it were a bad case the baby would probably die from inanition due to not being able to suck, or, again, the child might be put to death for some superstitious reason. I have never seen or heard of such cases and, so far as my experience goes, the deformity does not occur in this part of the world."

Mr. G. V. Lockett of Kingston, Jamaica, writes: "I have been at the General Hospital (200 beds) for about ten years and have seen only about 20 or 30 cases of hare-lip and cleft palate. All deformities are rare in this country. The people here are such a mixture that classification is impossible."

Mr. V. N. Chitale of Bombay writes: "Hare-lip and cleft palate are very common indeed in the Bombay Presidency and my friends tell me that this deformity is fairly common all over India amongst the different races."

Dr. Edward Armitage, writing from Hawaii, says: "Amongst the natives here I have never seen or heard of a case of hare-lip or cleft palate. I first came here in the summer of 1893."

Mr. G. W. Johnstone of Singapore says: "I have observed hare-lip occasionally amongst the Malays and Chinese. I have never had a case to operate upon in any of the hospitals in the East which I have had charge of. On several occasions my offer to rectify the deformity was not accepted. A Malay is rather proud of a deformity and looks upon it as a mark of Allah's favour."

I also heard from Mr. S. J. D. Esser of Java who says that hare-lip and cleft palate are common deformities amongst the natives there. They do not consider the deformity any disadvantage and are seldom anxious to have an operation performed for it.

It is remarkable that hare-lip should be a comparatively common deformity amongst the natives of India, China, and Java and never be seen amongst the natives on the shores of Lake Nyassa or in Hawaii and the neighbouring islands. I believe it to be highly probable that hare-lip and cleft palate occur with varying frequency amongst all nations of the world and that the frequency with which it is seen amongst uncivilised natives depends very largely upon their religious belief, which would determine whether a child born with a hare-lip should be put to death or allowed to live. In an island such as Java where the deformity is not regarded with abhorrence but is looked upon with indifference, or possibly as a mark of Divine favour, one can well understand that as the result of frequent intermarriage hare-lip would become, as it is at present, of common occurrence. If, on the other hand, as is probably the case in Central Africa and some of the islands in the South Pacific, the mothers for superstitious reasons destroy their defective offspring, this would account for the deformity never being seen.

Liverpool.

CASES OF CONGENITAL DEFORMITY IN THE FŒTUS.

BY H. CRIPPS LAWRENCE, M.D. DURH.,
AND
C. BRAINE-HARTNELL, M.R.C.S. ENG.

IN the first of the two following cases what might be described as the principal abnormality consisted of hernia of the stomach, spleen, and intestines into the thoracic cavity. The case was that of a male infant who was born after a normal labour and respired at birth but exhibited cyanosis soon afterwards. When he was first seen by us the respiratory movements were chiefly abdominal. He was ordered a "mustard" bath which partially revived him. Dextrocardia was diagnosed during life, the heart pulsation being to the right of the right nipple line. The liver was in the normal position and enlarged. The lungs evidenced atelectasis, a little air entering at the right base and still less at the left base. There were resonance over the right half of the thorax and marked hyper-resonance over its left half. Death occurred 14 hours after birth.

A post-mortem examination was made of the contents of the thoracic and abdominal cavities. On removing the sternum the heart was found to be pushed over to the right side of the chest, the right ventricle being uppermost, the base of the heart pointing to the right of the right nipple line and the apex pointing to the left of the right nipple. The pericardium contained a few drachms of serum. Atelectasis adnata existed, the lungs being compressed on each side of the spine. The right lung was slightly inflated, especially its lower lobe; the left lung was still less inflated. The tissue of each lung floated in water. The left side and part of the right side of the thorax was occupied by the stomach, the whole of the small intestines, and the greater part of the colon. The spleen was found behind the stomach isolated and separate from the left suprarenal capsule, the latter with its corresponding kidney being in the abdominal cavity. The spleen had a deep cleft in it dividing it to its centre. The colon was continuous with its lower portion through a ring-shaped aperture in the left crus of the diaphragm. Below the diaphragm the upper two-thirds of the abdominal cavity was occupied by the liver, the left lobe of which was relatively small. The gall-bladder was distended with greenish bile. Beneath and below the liver the two kidneys, which were structurally normal, with their suprarenal capsules, were found some two inches below their proper position on each side of the spinal column. To the left of the spine were a small portion of the descending colon, the sigmoid flexure, and the rectum.

The second of the two cases, which was seen by only one of us (H. C. L.), was a female infant. It was stillborn and was expelled suddenly, the funis being ruptured. Inspection of the body enabled the following particulars to be noted. The length of the body was 17 inches. The circumference of the head was ten and a quarter inches; the antero-posterior diameter was four and three-quarter inches; the occipito-mental diameter was four inches; and the sub-occipito-mental diameter was three and a half inches. The occipital bone was very small; the large interval between it and the posterior fontanelle was closed by membrane. The anterior fontanelle ran down as far as the coronal suture, becoming continuous with the frontal suture, the whole hiatus being occupied by membrane. The right ear was malformed, having only a rudimentary helix and no concha. The left eyelid was arrested in growth, shortened, and closed. The thorax was contracted above and expanded below. The acromial end of each clavicle was prominent. There was well-marked "beading" of the ribs. The right forearm was pronated. The right thumb and forefinger were flexed; the middle finger was flexed across the fore-finger. There was dactylitis of the first phalanx and the proximal end of the second phalanx of the ring finger, which with the little finger was straightened out. The left forearm was supinated. The left thumb was extended from the palm; the four fingers exhibited dactylitis; the phalanges of the left forefinger were extended, the upper end of the first phalanx being dislocated on to the palm; the remaining fingers were flexed. The umbilicus was occupied by a large omphalocele containing several coils of intestine; the sac measured four inches in circumference and two and a half inches from the abdominal wall to the fragment of funis at its lower end. The head of each femur was dislocated, the right more than the left, towards the thyroid foramen. The muscles of the arms and thighs exhibited indurations. The right tibia was curved and somewhat twisted, with the concavity on the inner side. The left tibia was more curved than the right one, with marked concavity on the inner side. The right foot manifested talipes equino-varus. The right big toe was in a line with the side of the foot; the next two toes were long; all three toes were separated from one another. The second toe was straightened; the two outer toes were shortened and flexed. The left toes were normal in length but the left little toe was deformed and curved under the sole of the foot. The genitals were normal.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

EAST LONDON HOSPITAL FOR CHILDREN, SHADWELL, E.

A CASE OF DIAPHRAGMATIC HERNIA.

(Under the care of Dr. EUSTACE SMITH.)

FOR the notes of the case we are indebted to Mr. P. Stanley Blaker, late resident medical officer.

A male child, aged two years, was admitted to the East London Hospital for Children on June 16th, 1901, for diarrhœa and vomiting. The history elicited from the mother was as follows. The patient was taken ill suddenly with severe vomiting on the morning of June 13th, which persisted after each meal till admission into hospital. He also became very drowsy and feverish and started in his sleep every now and then. On June 11th and again on the 16th (the day of admission) the patient had an attack of diarrhœa, though during the intervening time the bowels appeared to have been normal. There was no history of any previous illness. The family history was good. On admission the patient was fairly well nourished but looked very pale and extremely ill. In bed he lay on his back, with his legs extended and in an apparently semi-conscious condition. The eyes were sunken and half-closed, showing the sclerotics. At times he screamed. The breathing was quiet and easy though hurried and there was no cyanosis. The pulse was rapid (about 120) and regular. The temperature was 105° F. in the rectum. There was no œdema. An examination of the chest revealed nothing abnormal in the heart or the lungs. The abdomen looked natural, moved with respiration, and was soft, though the patient somewhat resented palpation. The liver and the spleen were made out to be of normal size. The progress of the case may be briefly summarised as follows. On the day after admission there was marked tenderness of the abdomen, so much that the patient cried out whenever the abdomen was touched; this, however, became less evident later. The bowels had acted several times, the motions being green, slimy, and offensive. On the 18th some dulness and tubular breathing were detected over the upper lobe of the right lung posteriorly and a day or two later these signs of consolidation were also manifested over the front of the right chest. The vomiting ceased soon after admission and the diarrhœa also abated, but gradually. The temperature ranged between 102° and 105°. The left ear discharged pus freely. The general condition became worse and the patient died on the 23rd.

Necropsy.—The body was well nourished. The eyeballs were much sunken. The tongue, the fauces, and the œsophagus were natural. With regard to the thorax the upper lobe of the right lung was solid, voluminous, but not adherent. On section it presented greyish lobular areas of broncho-pneumonia. The middle lobe also had patches of

broncho-pneumonia but to a less extent. The lower lobe was shrunk to about a third of its normal size, but it was not collapsed or airless nor did it appear to be diseased. The upper lobe of the left lung showed a few scattered patches of broncho-pneumonia. The lower lobe was partly collapsed and was covered by a layer of lymph on the surface. There was thick green lymph scattered over the whole surface of the visceral and parietal pleura of the right lung, but there was no collection of fluid pus. As to the heart, there were a few flakes of lymph in the folds of the pericardium round the vessels at the base. With regard to the abdomen, behind the liver and immediately to the right of the œsophageal opening, was a diaphragmatic hernia. The tendon of the diaphragm was stretched out over the protrusion (there was no rupture of the tendon) in the right side of the chest and formed a sac of about the size of a large hen's egg. The mouth of the sac was not constricted and it contained about half of the stomach, including the cardiac and pyloric orifices, so that the finger could be passed straight into the sac from the œsophagus or from the duodenum. Most of the greater curvature of the stomach was outside the sac. There were no adhesions and the hernia was readily reduced. There was also some omentum in the sac. The stomach and the intestines were natural. The liver was fatty; the spleen was natural; the kidneys were pale and showed some cloudy swelling. The brain and the meninges were healthy.

Remarks by Mr. BLAKER.—A diaphragmatic hernia is a sufficiently rare condition to merit publication of the above case. Two varieties of diaphragmatic herniæ are described—one the congenital (or true) and the other the acquired (or false). In the former the abdominal viscus passes through either a deficiency in the structure of the diaphragm or through one of the natural openings which may be unusually large. Such openings may be the œsophageal or one of the fissures situated between the sternum and seventh costal cartilage in front or between the lumbar and costal attachments of the diaphragm behind. Sometimes, however, a portion of the diaphragm seems to be weakly developed and yields before a hernial protrusion. This bulging occurs more often in the muscular portion of the diaphragm. In the latter variety (acquired), which is by far the commoner (about 10 to 1), the hernia is nearly always due to an injury which tears through the diaphragm and allows the abdominal viscus to escape in practically every case without a peritoneal covering. Both varieties are said to occur mostly on the left side—i.e., the protrusion takes place into the left side of the chest—the pleura being either torn through or else carried before the hernia. The presence of the liver on the right side is held responsible for this greater frequency of herniæ on the left side. The organ most commonly displaced is the stomach, next in frequency is the transverse colon, and then follow the omentum, the small intestines, the spleen, the liver, the pancreas, and the kidneys in the order named. Considering these few facts it will be seen that the case recorded was not altogether of the usual type. The hernia was of the congenital variety; the outer sac was formed by a bulging in the tendinous portion of the diaphragm and was on the right side in spite of the presence of the liver.

I am indebted to Dr. Eustace Smith for permission to publish the notes of the case.

ROYAL ALBERT HOSPITAL, DEVONPORT.

PERFORATED DUODENAL ULCER; OPERATION; RECOVERY.

(Under the care of Dr. ALONZO G. RIDER.)

FOR the notes of the case we are indebted to Mr. H. M. Major, assistant house surgeon.

The patient, a male, aged 44 years, was at 12.30 P.M. on Jan. 8th, 1904, seized with acute epigastric pain immediately after swallowing a piece of beef. He was seen by Dr. Rider at 1.30 P.M. who found him in great pain and much collapsed. There was extreme tenderness over the whole abdomen, especially in the epigastric region. Liver dulness was present. One-sixth of a grain of morphine was given and hot water bottles were applied to the feet. He was seen again at 4 P.M. when the collapse had partially passed off. The pain was much more severe and more generalised. Bilious vomiting which did not relieve the pain was frequent. Liver dulness was then indistinct and fixation of the abdominal muscles in the upper part of the abdomen was commencing. Dr. Rider ordered his immediate removal to the hospital but delay occurred and he did not arrive till 7.30 P.M.

The following history was given. The patient had suffered on and off for the past three years with pain after food and occasional vomiting. The pain, which came on at short intervals after a meal and was referred to the epigastrium and occasionally to between the shoulders, was relieved by vomiting. He had obtained considerable relief by dieting himself. There was no history of hæmatemesis but he had remarked on the very dark (tarry) appearance of his motions. There was a history of constipation for some years. For the past three weeks there had been a considerable increase in the amount of pain which persisted after vomiting. The pain was so severe at times that he had been unable to eat anything, though he managed to continue his work. On Jan. 7th when he returned from work he was unable to eat any supper and on the 8th his breakfast consisted of a couple of dry biscuits. He went to work but was in considerable pain and on returning home at mid-day had just started his dinner when the violent attack of pain commenced.

On admission he was extremely collapsed. The temperature was 97° F. The pulse was 112, thready, and at times almost imperceptible. A hypodermic injection of five minims of liquor strychninæ was given at once. The whole abdomen, especially in the upper part, was absolutely rigid. There was no abdominal distension and the percussion note was apparently normal. There was increased diminution of the liver dulness. Immediate operation was decided on and measures were taken to minimise shock.

The patient was anæsthetised by Mr. H. M. Major (chloroform and ether being used), and assisted by Mr. J. J. N. Morris the abdomen was opened by a five inch incision between the xiphisternum and umbilicus (on reaching the subperitoneal fat it bulged forward, giving the appearance of a knuckle of small intestine presenting in the incision). On opening the peritoneum free gas escaped as well as a small quantity of greenish turbid fluid from a pouch in the gastro-colic omentum. On drawing up the stomach into the wound a quantity of similar fluid escaped from the neighbourhood of the pylorus and on further examination a perforation four-eighths of an inch by three-eighths of an inch (the long axis being transverse) was found on the anterior surface of the first part of the duodenum. There was a considerable amount of indurated tissue surrounding the ulcer. The perforation was temporarily closed by a gauze swab and systematic sponging of the whole of the abdominal viscera was undertaken, followed by irrigation with many pints of normal saline solution. No solid pieces of food were discovered but some flakes of recent lymph were removed from the viscera in the neighbourhood of the perforation. Suturing was performed with difficulty partly on account of the friable nature of the surrounding tissue and partly owing to the depth of the intestine (it was not considered necessary to divide the right rectus). A purse-string silk suture surrounding the perforation was first passed, followed by several interrupted Lembert sutures. A quantity of saline solution was left in the peritoneal cavity and a drainage-tube was passed down to the duodenum.

The patient stood the operation well and during its performance was given a hypodermic injection of five minims of liquor strychninæ and an enema of five ounces of hot coffee and one ounce of brandy. The enema was ordered to be continued every four hours and the strychnine every two hours until toxic symptoms showed themselves. Twitchings occurring at 1 A.M. (he having then had 20 minims in five and a half hours) the injections were stopped for four hours and then three minims were given every four hours. No further trouble occurred with the injections. Four hours after his return to bed he vomited a small amount of green frothy fluid and this continued at half-hourly intervals until 8 A.M., the total amount being five ounces. After a hypodermic injection of a quarter of a grain of morphine sulphate and $\frac{1}{150}$th of a grain of atropine sulphate he vomited once only.

On Jan. 9th the patient had a fair amount of sleep. The temperature was 98°, the pulse was 82, and the respirations were 20. The first dressings were slightly stained with serous fluid. The abdomen moved well with respiration. Nutrient enemata of white of three eggs, four ounces of peptonised milk, one ounce of raw starch, and half a drachm of salt were ordered every six hours in place of the coffee and

brandy. In the evening the temperature was 99·2°, the pulse was 82, and the respirations were 22. The dressings were very slightly stained. The patient complained of thirst, for which mouth washings with hot water were ordered and a pint of saline solution by the rectum. There was some pain on inspiration under the right costal arch. On the 10th the temperature was 98°, the pulse was 68, and the respirations were 20. He was at first restless during the night but slept well and woke refreshed after a hypodermic injection of a quarter of a grain of morphine sulphate and $\frac{1}{150}$th of a grain of atropine sulphate. The strychnine injections were stopped. The wound looked perfectly healthy. There was some increased amount of discharge. The pain under the ribs was less. In the evening the temperature was 99·6°, the pulse was 76, and the respirations were 22. He felt comfortable. On the 11th the patient had passed a good night and looked distinctly better. The temperature was 98°, the pulse was 72, and the respirations were 20. There was practically no discharge; the tube was left out and a wick of cyanide gauze was substituted. The pain under the ribs had quite gone. He was given sips of hot water (half an ounce) every two hours. The bowels opened naturally and the motion was normal in appearance. On the 12th he had had a good night. He felt and looked very well. He was given ten minims of bovinine and water to one ounce every two hours. On the 13th the bovinine was gradually increased to one drachm and alternated with one ounce of peptonised milk every two hours. The nutrient enemata were stopped. The further progress of the case was quite uninterrupted. The patient was gradually put on full diet and left the hospital at the end of a month for the convalescent home feeling quite well.

Medical Societies.

CLINICAL SOCIETY OF LONDON.

The Value of the X Rays in the Diagnosis of Early Pulmonary Tuberculosis. The X-ray Treatment in Recurrent Cancer of the Breast.

A MEETING of this society was held on May 13th, Dr. FREDERICK TAYLOR, the President, being in the chair.

Dr. A. S. GREEN (Lincoln) and Dr. W. H. B. BROOK (Lincoln) communicated a paper upon the Value of the X Rays as a Factor in the Diagnosis of Pulmonary Tuberculosis which was illustrated by lantern slides. The object of the paper was to demonstrate the use of this method of diagnosis in the early stages of the disease. That the full value of the x-ray examination might be obtained it was absolutely necessary to compare the evidence derived by this method with that elicited by careful examination of the physical signs and by a microscopical examination of the sputum. It must be definitely laid down that the Roentgen rays were only to be used as an adjunct to the usual methods of examination and could never replace these latter. Dr. Green had examined and photographed during the past two and a half years a large number of patients, in nearly every one of whom the physical signs had been carefully examined by Dr. Brook. X-ray photographs taken at various intervals both before and after sanatorium treatment were exhibited and the physical signs were narrated. In some cases where the physical signs had entirely disappeared under treatment the shadows were absent from the second plate; in others where the patient had made great improvement but the physical signs had not entirely disappeared the shadows had altered in character; in others again, in spite of the patient's improvement and the disappearance of the chief physical signs, the plates taken before and after treatment were identical both in density and extent. The examination must be carried out by both screen and plate methods. By means of the former the following points could be noted: (1) the height and movement of the diaphragm on the two sides both in quiet (minimum) and forced (maximum) respiration, and these must be compared in front and behind, it having been shown that where the disease was more active or extensive the level of the diaphragm would be higher and the movements more curtailed and that unilateral limitation of movement of the diaphragm was one of the earliest signs of pulmonary tuberculosis; (2) the position and size of the heart, the shape and slope of the ribs and the width of the intercostal spaces; and (3) the transradiancy of the lungs and the effect upon this of inspiration. This examination could be carried out with the patient standing up or (preferably) lying down on a table with a vellum top and a tube below freely moveable in both directions. The skiagrams exhibited had all been taken by the plate-to-back method with the tube from 20 to 24 inches from the plate. The exposure had varied from 30 to 60 seconds. Development should be very thorough and should always be carried out by the medical man himself instead of being left to chemists and photographers, as much could be learnt during the process of development which was not so apparent when the plate was fixed.—Dr. W. EWART congratulated Dr. Green and Dr. Brook upon their paper and remarked on the value of the movements of the diaphragm and of the ribs in the early diagnosis of pulmonary tuberculosis.—Dr. C. THEODORE WILLIAMS did not quite agree with the statement that cavities, excepting very minute ones, could not be diagnosed by auscultation. Modern auscultators were not perhaps as careful as those of a previous generation. Some cavities might be difficult of detection but were readily diagnosed if the patient were made to cough.—Dr. G. B. BATTEN considered that as a means of realising more vividly the physical condition than was, perhaps, possible by auscultation the x rays were to be welcomed in the diagnosis of phthisis, also for recording the progress of the disease in its different stages. Skiagrams were useful both to the patient and to the medical man.—Dr. H. S. FRENCH inquired as to the extent of fibrous tissue which could be seen in a skiagram and how it could be distinguished from tuberculous deposits.—Mr. C. R. C. LYSTER asked what methods were adopted for measuring the output of the tube and also if the x rays could be utilised to distinguish between bronchitis and tuberculosis. A thickened pleura also presented difficulty.—Dr. WILLIAM PASTEUR inquired as to the relative transparency to the rays of enlarged bronchial glands and whether fluid in the pleural cavity could be seen to vary with the position of the patient.—The PRESIDENT considered that ocular demonstration of the morbid condition was most valuable but at the same time shadows were not always infallible and required to be interpreted with care. Post-mortem records of cases so examined would be very valuable.—Dr. GREEN and Dr. BROOK replied.

Dr. E. A. PETERS (introduced by Mr. CHARTERS J. SYMONDS) described two cases of Recurrent Carcinoma of the Breast treated by the X Rays. In the first case the original operation had been performed by Mr. Symonds. The treatment was pursued for 22 months; the subcutaneous nodules and ulcer disappeared under the treatment. They returned on cessation of the treatment but in a condition of diminished activity. Eventually growths appeared subcutaneously at the back of the thorax. These again nearly disappeared on treatment. Unfortunately the operation cicatrix broke down during an attack of dermatitis and caused a large ulcer which persisted to the patient's death in the twenty-second month of treatment from thoracic involvement. Meanwhile the other breast and the subcutaneous structures and glands of the other wall of the thorax became involved. The supraclavicular glands became affected while the supraclavicular region was exposed to the x rays. The patient found in the x rays great relief from pain but suffered from the ulcer and pressure on the nerves. In the second case subcutaneous nodules and pleuritic thickening improved very considerably under a month's treatment. The patient died shortly afterwards from thoracic involvement. There seemed to be a tendency for scar tissue to break down under the influence of the x rays.—Dr. H. LEWIS JONES said the question of the treatment of malignant disease by the x rays was one of the highest importance. The treatment had a most undoubted and beneficial effect upon superficial deposits and ulceration. But it was most disappointing to find cases die from internal deposits while under treatment. Locally there was success, remotely there was failure. The solution of this problem afforded opportunity for much speculation. But as a practical point x-ray treatment should be applied much earlier than it generally was; the treatment might be employed immediately after operation. There was no doubt that the rays possessed the property of changing the characters of a growth or even of preventing its tendency to recur.—Dr. BATTEN referred to a case of recurrent cancer of the breast in which the nodules had been removed by operation as fast as they had recurred but

upon the seventh occasion he had exposed the part to the x rays with the result that the nodules had completely disappeared, the patient ultimately dying from an intercurrent malady. The x rays appeared to have a selective effect both upon degenerating and also upon actively growing epithelial cells. Some dermatitis must ensue to produce a beneficial effect. The occurrence of internal deposits suggested the possible liberation of toxins by the superficial treatment.—Dr. A. E. T. LONGHURST asked whether the rays might not at times excite the local condition and so give rise to a rapid development of the disease.—Mr. A. A. BOWLBY had no doubt whatever that the x rays were by far the most potent agent at their command for the treatment of recurrent cancer of the breast superficially situated. On the other hand, they might produce considerable inflammatory reaction, as in a case he mentioned which died from cellulitis of the neck.—Mr. LYSTER expressed the opinion that excision was still the best method of dealing with cancer when it was discovered early enough but that in inoperable cases relief of pain, comfort to the patient, and removal of recurrent nodules could be brought about by the rays.—Dr. PETERS replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE

Poisoning by Cantharides.—Poisoning by Coal Gas and Carburetted Water Gas.—Duties of Medical Men at Coroners' Inquests.

A MEETING of this section was held on April 22nd, Sir JOHN W. MOORE, the President of the section, being in the chair.

Dr. F. C. MARTLEY brought forward a case in which an elderly woman had been Poisoned by Cantharides. About an ounce of the powdered drug had been administered to her in a glass of rum but in spite of the amount having been so large she survived for 31½ hours.

Professor E. J. MCWEENEY read a paper on the Cases of Poisoning by Coal Gas that have occurred in Dublin since the addition of carburetted water gas to the ordinary coal gas. He said that the first person to draw attention to the increased percentage of carbon monoxide in the Dublin coal gas was Professor Emerson Reynolds who, in a paper read before the Royal Dublin Society in 1900, communicated the result of a number of analyses made by him which went to show that the ordinary percentage of carbon monoxide—namely, 6 per cent.—had been more than doubled during February and March, 1900, and this increase he accounted for by the addition of carburetted water gas. Some recent analyses made by Mr. Holmes Pollok, of the Royal College of Science, showed the presence of 17 2, 16 8, and 14 6 per cent. of carbon monoxide. Professor McWeeney then proceeded to recount in detail the circumstances attending the seven fatal cases that had come under his notice during the past three years. Special features of interest attached to each. In the first group the family of four lived in a house where gas was not used and there were no fittings. The gas had penetrated into it from a broken main in the street with the result that one of the persons was found dead and the others were more or less collapsed. The hæmoglobin in the fatal case contained much carbon monoxide. In the second group an attempt had been made to defraud the gas company by leading the gas into the house without it passing through the meter. The indiarubber tube used in the attempt had slipped off, with the result that the family of three persons were asphyxiated in their sleep. The third group of cases was that of a man and his wife who were suffocated in a bedroom at a Dublin hotel by gas escaping from a wall-bracket the stop-cock of which was half open. The last case was that of a young man who was asphyxiated in his bath by the carbon monoxide contained in fumes escaping from a badly constructed and unventilated "geyser." The hæmoglobin in this case was loaded with carbon monoxide.—Professor C. R. C. TICHBORNE said that in the last case it was evident that the carbon monoxide did not come from the combustion of the gas, as it would then have been converted into carbon dioxide, but must have got into the room as carbon monoxide. He suggested that as the accident had happened about 9.30 P.M., a time when there was great pressure in the mains, the carbon monoxide might have escaped through the air inlets in the Bunsen burners.—Mr. O'CONNELL J. DELAHOYDE said that in his opinion a good deal of the ill health among the working classes was to be put down to the use of penny-in-the-slot meters and gas cooking stoves which were not connected with a flue.—Dr. T. P. C. KIRKPATRICK said that it seemed remarkable that carbon monoxide gas was escaping at such a rate as to accumulate in a man's hæmoglobin and to poison him without exploding though the gas jet was lighted all the time.

Dr. MARTLEY read a short paper on the Duties of Medical Men at Coroners' Inquests, a subject that had been suggested by events which had been reported by the press to have occurred at a recent inquest. It appeared that a man had been taken dead into a hospital at which he had attended as an out-patient more than six months previously. The coroner asked the house surgeon to give his opinion as to the cause of death without making a necropsy. This he declined to do, whereupon the coroner directed the jury to find a verdict. The following motion was adopted unanimously by the section:—

Resolved: That the Council of this Section be requested to communicate to the Council of the Academy the facts relative to the case in which one of the Dublin coroners recently called upon a member of the medical profession to certify to the cause of death of a patient who was brought dead into the Royal City of Dublin Hospital, with a recommendation that those facts, as well as the relation of the profession to coroners' courts, should be brought under the notice of the authorities.

SECTION OF PATHOLOGY.

Exhibition of Specimens.

A meeting of this section was held on April 29th, Dr. H. C. EARL, the President, being in the chair.

Dr. T. G. MOORHEAD showed three slides in which the Leishman-Donovan Bodies appeared, giving a description of the cases from which they were taken and a history of the discovery of the bodies and their relation to malaria.

Professor E. J. MCWEENEY showed specimens of Blood from a case of Pernicious Anæmia exhibiting Punctate Basophilia. Many of the red corpuscles were thickly sprinkled with granules of strongly basophilic character which could be detected in preparations stained by Jenner's and Pröscher's modifications of Romanowsky's stain, as well as in triacid preparations. He was inclined to look upon the granules as due to karyorrhexis.

Professor MCWEENEY showed slides of Rabbit's Blood containing the Nagana Parasite; also of Human Blood containing the Parasite of Sleeping Sickness. These latter had been given to him by Dr. W. McCarthy, travelling scholar in pathology of the Royal University of Ireland, who had obtained them from the Pasteur Institute where he had been working.

EPIDEMIOLOGICAL SOCIETY.—The last meeting of the session of this society was held on May 13th, Dr. B. A. Whitelegge, the President, being in the chair.—Dr. Moritz Pistor, Principal Medical Officer to the Ministry of Religion, Education, and Public Health of Prussia, read a paper on the Prevalence of Enteric Fever in Prussia during the ten years 1892 to 1901, with remarks on the etiology and prevention of the disease. After a brief retrospect of the history of the recognition of a *febris pestilens* by Willis and Sydenham and of the differentiation of typhus fever and enteric fever by Hildebrand and Murchison 50 years ago he proceeded to trace the diminution in the mortality from enteric fever from an average of over 6 to less than 2 per 10 000 of the population throughout the kingdom during the last quarter of a century, though admitting that owing to the habits of the people in the less advanced provinces, especially where the population was mainly Polish, the registration of the causes of death was imperfect and the notification still more so, many cases of illness not being medically attended, so that he would not attempt to estimate the morbidity or the fatality on such defective data. The reported death rates in the various districts year by year were shown in a table and illustrated by a coloured map. In the analysis of these death-rates it seemed impossible to fix on any single condition—climatic, orographic, or geological, or connected with the industries—as the chief factor. Districts having everything in common had high or low mortalities and others differing in every respect had the same, the habits of the people themselves being of the greatest importance. The highest mortalities were in Trier on the Moselle, near to the French frontier, with hot summers and mild winters, closely

followed by Arnsberg, also in a mountainous country, with a mining and industrial population, and Dantzig lying low on the sea coast but with colder winters. Lower but still above the mean came the vast plains from Dantzig to Königsberg, devoted to agriculture, and Aachen, Magdeburg, Coblentz, and Hildesheim west of the Elbe and for the most part industrial. Below the mean were Nassau, close to Arnsberg, with a continental climate and mainly agricultural; Hanover, with the exception of Hildesheim, industrial in the south but agricultural and maritime in the north, with Holstein and Schleswig of like character; the wealthy residential town of Wiesbaden; and Berlin, the metropolis of the kingdom and empire. Aurich on the North Sea, including several islands, had the lowest mortality from enteric fever and diphtheria. Lower Silesia with the district of Oppeln, which had an evil reputation for its general sanitary conditions, in constant communication with Austria and Russia, was, strange to say, below the average, while on the other hand Stralsund, in the otherwise healthy district of Pomerania, remarkable for the cleanliness of its peasantry, showed a high mortality which, however, was accounted for by the inclusion of deaths in the University Hospital of Greifswald, for the water-supply was unimpeachable. The low death-rate in Upper Silesia and the Westphalian coalfields was explained by the general provision of excellent public supplies after the wells in the locality had been drained or rendered undrinkable through the mining operations in recent years. The excessive prevalence of enteric fever in the eastern provinces, whether agricultural or industrial, was connected with the apathy and disregard of all hygiene by the Polish population, the Poles being incorrigibly dirty. So, too, in the mining districts of Arnsberg and parts of Westphalia the miners were very largely foreigners and immigrants, French Walloons, Poles, Italians, and even Roumanians. Even in the German population, however, miners as a class were deficient in the sense of order and cleanliness, drawing their water from wells and watercourses which they had polluted with excreta and sewage and living in a state of overcrowding. As a rule the sanitary conditions of Saxony and the Rhine provinces were good, while the pure German populations of Hanover and Schleswig-Holstein were from their excellent sanitary surroundings and prosperous circumstances the freest from enteric fever. Dr. Pistor having discussed the views of Murchison and Budd and of Buhl and von Pettenkofer on the etiology of enteric fever expressed his belief with Koch that the bacillus was incapable of maintaining its existence in the soil and even of retaining its vitality for many days out of the human body. Sudden outbreaks and epidemics were mostly caused by accidental pollutions of water-supplies and milk supplies, while other articles of food and direct personal infection were the ordinary vehicles in the sporadic forms of the disease, unrecognised cases or those that were so mild as not to inspire alarm playing a more important part in the ordinary spread of the disease. He referred to the Gruber, Conradi, and von Drygalski's serum and other methods of diagnosis, but considered that they could be relied on only in the hands of experts. If, however, every case were reported and traced to its source the assiduous carrying out of every sanitary precaution would in course of time bring enteric fever, like cholera, into the class of what he might call "travelling diseases."

GLASGOW SOUTHERN MEDICAL SOCIETY.—A meeting of this society was held on May 12th, Dr. Thomas Richmond, the President, being in the chair.—Mr. R. H. Parry exhibited amongst others the following specimens and read notes of the cases from which they were removed. 1. A prostate removed by Freyer's method. This was removed complete in 15 minutes, only a thin outer layer of the gland being left adherent to the recto-vesical fascia; the removal of this outer layer was considered inadvisable as its absence would have permitted of extravasation of urine into the pelvis. The prostatic urethra was removed along with the gland. 2. A Foreign Body removed from the œsophagus by œsophagotomy. It was a piece of coal which had been introduced into the gullet with suicidal intent. The operation was the second one performed for a similar condition in the same patient who after this operation, from which he made a good recovery, was removed to an asylum. 3. A specimen from a case of Complete Gastrectomy. The patient, who was a woman, was sent to the Victoria Infirmary in April, 1902, by Dr. A. A. F. Steen. Until three months prior to admission she had suffered from weakness and giddiness with progressive emaciation; she had no gastric symptoms up to this time when she suffered from pain and sickness, weakness and anæmia. A swelling was discovered in the "pit of the stomach" two months before operation. When admitted to hospital she was in a very low condition, the emaciation being extreme, and Mr. Parry had great doubts as to the advisability of any operative procedure at all but she made continual appeals to him "to do something." The abdomen was opened in the middle line and the stomach was examined; it was found to be very small, with a considerable carcinomatous tumour involving the pylorus and extending along the lesser curvature almost to the cardiac end of the viscus. The whole was removed, the duodenum with the head of the pancreas being carried over to the left side and stitched to the œsophagus by end-to-end approximation. The operation was hurriedly completed owing to the serious condition of the patient, the parietes, which consisted practically of skin and peritoneum (so great was the emaciation), being speedily brought together. On the day following the operation a portion of bowel protruded from the wound and this gave rise to some little disturbance, but thereafter the patient recovered gradually, food being taken by the mouth on the fourth day after operation. She was shown to the society and declared herself to be feeling very well. She was able to work and to take food fairly well, her breakfast usually consisting of an egg, toast, and tea and her dinner of a little butcher's meat and potato. Fish she declared did not agree well with her. She sometimes suffered a little pain but constipation, which had been a marked feature of the case prior to the operation, now troubled her very little. She looked remarkably well. 4. A specimen of the Middle Third of the Anterior Wall of the Stomach removed for cancer 18 months ago, the tumour also involving the transverse colon. The patient was now alive and well.—Mr. Parry read notes of another case of Complete Gastrectomy which did well for seven days when, owing to the yielding of some of the sutures, complications supervened which terminated fatally. He also showed specimens from two cases of Pylorectomy and two cysts of the Pancreas, the removal of which was followed by recovery. He said that these cysts were generally found about the tail of the pancreas and were, as a rule, mistaken for floating kidney; an important point in the diagnosis of this condition was that the right kidney was the one usually found to be moveable, and even after its reposition a small part of it might still be palpable, but in the case of the left, after replacement no part of the kidney should be palpable and where something was felt in the left loin in these circumstances strong suspicion should be entertained of the presence of a pancreatic tumour.—Dr. J. Lindsay Steven, Dr. T. K. Monro, Dr. Carstairs C. Douglas, Dr. D. Macgilvray, and the President took part in the ensuing discussion.

EDINBURGH OBSTETRICAL SOCIETY.—A meeting of this society was held on May 11th, Dr. N. T. Brewis, the President, being in the chair.—Dr. F. W. N. Haultain read a paper on Malignant Uterine Complications of Fibro-myomata. He described cases and exhibited micro-photographs of specimens showing distinct sarcomatous degeneration of fibro-myomata with recurrence after removal. He had found four cases of malignant degeneration out of 1200 collected cases of fibro-myoma. He discussed the question of panhysterectomy as compared with the supravaginal method of treating the stump after removal of the uterus with fibro-myomata. The latter operation had a considerably less mortality in the hands of most operators and was therefore to be preferred, as the risk of possible malignant degeneration of the cervical stump was much less than the extra risk of the mortality in panhysterectomy. He considered that fibroids which produced no symptoms should be left alone as the risk of their removal by operation was much greater than the possible risk of malignant degeneration if left without operation.—Professor A. R. Simpson, Dr. James Ritchie, Dr. J. H. Ferguson, and others discussed the paper.—Dr. J. W. Ballantyne read a paper entitled "The Obstetric Satchel: a Problem in Asepsis." With respect to the intra-uterine use of antiseptics he said that it was better to prevent the access of pathogenic organisms to the uterus than to pursue them with antiseptics after they were there. By a germicidal action of the vaginal mucus and possibly by other protective mechanisms of a more complex kind, microbes introduced into the vagina

from without were rendered innocuous. The gush of liquor amnii, practically a normal saline solution, helped to wash away any microbes which the vaginal mucus (perhaps becoming scanty) had failed to kill. The placenta, like a huge sterilised sponge, swept through the vagina, carrying clots, shreds of membrane, meconium, vernix, and all such putrescible matter before it. Outside the vaginal orifice, however, there were congregated multitudes of pathogenic and pyogenic organisms which might be carried in on the examining finger, on instruments, or on the douche nozzle, and near the anus there was the bacillus coli communis which was greatly to be feared in its later developments. Obstetricians disinfected the vulva lest fingers, instruments, or douche might receive contamination on entering the vagina. The accoucheur's hands were carefully prepared and the necessary instruments were boiled in maternity hospital practice and to some extent in private practice, but the ordinary obstetric bag was a weak point. The bag with detachable lining was an improvement, although it fell short of the requirements necessary for a surgical operation, as an ovariotomy. Dr. Ballantyne showed an obstetric bag of enamelled iron trays, &c., suggested by Professor Edgar of New York. He then described his modification, which he designated a satchel. It consisted of two trays made of tinplate, the one to fit into the other but not completely; the larger measured 17 inches by 7½ inches by 6 inches; the other was less deep. In the space between these the bottles of chloroform, ergotin, ether, douche tubes, &c., were contained in a cotton hold-all with many compartments. The various obstetric instruments were each in linen bags, all previously sterilised. A sterilised coat or apron was carried in sterilised towels. The two metal cases could be used as trays for washing the hands or for sterilising instruments over a fire. The whole was covered with a brown canvas cover which acted as a carrier. There was no rattling noise in carrying it.—Dr. G. L. Chiene, Dr. A. D. Webster, and others discussed the paper.—Professor Simpson showed a Commemoration Plaque of the Fiftieth Anniversary of the Foundation of the Obstetrical Society of Leipsic.

PATHOLOGICAL SOCIETY OF MANCHESTER.—A meeting of this society was held on May 11th, Dr. E. S. Reynolds, the President, being in the chair.—Dr. J. Dreschfeld and Dr. F. Craven Moore described three cases of Primary Sarcoma of the Liver. 1. A female, aged 56 years, suffered for four months from gastric disturbance, pain in the hepatic region, abdominal tumour, loss of weight, jaundice, and towards the end from ascites. At the necropsy the liver was found to be occupied by a large single mass of new growth; the peritoneum and the cœliac and mediastinal glands were the seat of metastases. In structure the new growth was a sarcoma, round- and spindle-celled, probably arising from the endothelium of the portal capillaries. 2. A male, aged 23 years, suffered for five months from weakness, wasting, and abdominal tumour. There was no ascites or jaundice. The necropsy revealed a diffuse infiltrating new growth of the liver, with metastases in the portal glands. In structure it was a typical endotheliema of the portal capillaries. 3. A male, aged 61 years, suffered for five months from weakness, wasting, and abdominal tumour. No jaundice was present. Ascites occurred towards the end. At the necropsy the liver was found to be occupied by a number of nodules of new growth, the larger of which were cystic. In structure they were angio-sarcomata undergoing myxomatous degeneration.—Dr. Charles H. Melland and Dr. D. Orr gave a lantern demonstration of coloured micro-photographs illustrating the morphology of the malaria parasite.—Dr. R. T. Williamson showed specimens of a Small Sarcoma of the Cerebellum affecting the left amygdala only. The symptoms had been chiefly headache, vomiting, double optic neuritis, and ataxia with a tendency to fall to the left. Marchi's method of staining revealed marked degeneration of the posterior root fibres in their intramedullary course in the upper half of the spinal cord. There was marked degeneration in Burdach's columns in the cervical region but Goll's columns were unaffected.—Dr. Williamson also showed specimens from the brain of a patient who had suffered for 12 months from intense headache. There was no optic neuritis until the last four days of life. Four tuberculous masses were present in the cerebrum, all of which were surrounded by a thick fibrous capsule. The masses resembled gummata but their tuberculous nature was shown conclusively by the presence of numerous tubercle bacilli.—Dr. I. Walker Hall showed an Intrapericardial Aortic Aneurysm communicating with the pulmonary artery and left auricle.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.—The closing meeting of the session of this society was held on May 9th, Mr. A. E. Maylard, the President, being in the chair.—Mr. G. B. Buchanan showed the Sac and Coverings of an Umbilical Hernia with omentum adherent round a large part of the wall from a patient 71 years of age, operated on for strangulated hernia.—Dr. A. Napier showed a patient, the subject of very extensive Lupus Verrucosus, who was under treatment by curetting, actual cautery, and injections of tuberculin; there had been marked improvement since this treatment was commenced.—Mr. Buchanan also showed a specimen of Epithelioma of the Œsophagus which had penetrated into the larynx.—Dr. Napier read notes of a case of Acromegaly in a woman, aged 34 years. The condition had been slowly advancing for five years. A series of photographs and the patient were shown.—Dr. J. Wainman Findlay read notes of a case of Chronic Lymphatic Leukæmia and demonstrated the condition of the blood. The patient was 60 years of age. The enlargement of the glands under the chin was noticed two years previously and now all the superficial glands were greatly enlarged. The proportion of leucocytes to red corpuscles was about 1 to 2 5 and the small lymphocytes formed 96 per cent. of the first-named. The red blood corpuscles numbered 1,424 000 and the white blood corpuscles 568,€60 per cubic millimetre. The patient had had syphilis 35 years ago and malaria some time later.—Dr. T. K. Monro and Mr. J. Archibald Campbell reported a case of Splenic Abscess and Empyema due to the Bacillus Typhosus and associated with a positive Widal's reaction but without intestinal lesion. Except fever the case showed none of the signs of enteric fever. The case terminated fatally in about three weeks.—Mr. R. H. Parry showed a case illustratin Brophy's Operation for Cleft Palate.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on April 28th, Dr J. H. Stowers, the President, being in the chair.—The following cases were exhibited: Dr. Alfred Eddowes: (1) A case, aged 20 years, of Lichen occupying nearly the whole of the body covered by clothing; and (2) microscopical specimens from a case of Acute Eczema.—Dr. E. G. Graham Little: (1) A case for diagnosis; the patient was a man, aged 58 years; ? Syphilis, ? Tuberculosis; (2) Tertiary Ulcer simulating Rodent Ulcer; (3) Lichen Planus Verrucosus; (4) Lichen Planus Hypertrophicus with (?) Mycosis Fungoides; and (5) Chancre on the Lip with Secondary Eruption and Breaking-down Gumma of the Left Leg.—Mr. T. J. P. Hartigan: Tuberculosis of the Lobules of Both Ears which had been pierced for ear-rings 24 years ago.—Dr. V. H. Rutherford: Urticaria Pigmentosa.—Dr. T. D. Savill: (1) A case for diagnosis, (?) Pustular Urticaria; (2) Morphœa; (3) Prurigo Æstivalis; (4) Erythema Circinatum; and (5) Lichen Planus Verrucosus.—Mr. Arthur Shillitoe: (1) A small Papular Syphilide; and (2) Varioloid Syphilis.—Dr. E. Stainer: Localised Atrophy of the Skin.—The President: (1) Alopecia Neurotica Universalis; (2) Eczema Pustulosum of the Hands; and (3) photographs of a case of Hydroa Herpetiforme.—Dr. Wilfrid B. Warde: Persistent Œdema of the Hand and Forearm.

LEEDS PUBLIC DISPENSARY.—Professor Clifford Allbutt who for many years was closely associated with the Leeds Public Dispensary, opened the new buildings of that institution in North-street, Leeds, on May 12th In the course of a very interesting address Professor Allbutt dwelt upon the splendid victories which the healing art had achieved. Typhus fever and other diseases, he said, had become rare or had disappeared, pulmonary consumption had been reduced, and the extraordinary discovery of the nature of malaria had changed or would change the face of vast fertile areas which had hitherto been almost uninhabitable. With these changes going on they might hope that charitable institutions such as the Leeds Dispensary would not need to be enlarged continually in the future as they had in the past. Prevention of disease and knowledge of its laws were being attained and he thought would encroach upon the curative part of their profession.

Reviews and Notices of Books.

The Treatment of Injuries by Friction and Movement. By WHARTON P. HOOD, M.D. St. And., M.R.C.S. Eng., L.S.A., Honorary Surgeon to the Royal Academy of Music, &c. London: Macmillan and Co. 1903. Small 8vo, pp. 182. Price 4s. 6d.

JUST a third of a century has passed away since Dr. Wharton P. Hood contributed to our columns and afterwards published in book form a series of papers on Bone-setting, in which he explained to the medical profession the nature of the manipulations then customarily practised by the persons who assumed the title of "bone-setters" and whose use and wont it was to deal with cases, at that time unfortunately only too common, in which a period of unduly prolonged rest after what might at first appear to be only a trivial injury had been followed by some form of permanent disability. Dr. Hood showed that these cases were, as a rule, examples of spurious ankylosis combined with muscular wasting, and explained not only the nature of the manipulations by which they were frequently cured but also the safety and advantage with which these manipulations could be conducted under the guidance of adequate anatomical and surgical knowledge. It was well known at the time that the so-called "bone-setters" frequently inflicted serious injuries upon persons who came under their hands and also that members of the fraternity had been successful in cases which had resisted the treatment of the most skilful surgeons—cases some of which had been rendered almost notorious by the rank or position of the patients. In commenting upon Dr. Hood's papers when they first appeared we expressed the opinion that they were calculated to inflict a death-blow upon a form of quackery which had rested upon a neglected or forgotten truth; and said that the author had called attention to morbid conditions which had been only very faintly described in books and scarcely at all recognised in practice, as well as to methods of cure at once simple and intelligible. Manipulations analogous to those of the "bone-setter" were at that time often required in practice; and, in the hands of a good surgeon, would be applied to none but suitable cases and under precautions which removed all danger of injurious consequences.

In the little book which, after the lapse of so long a period, Dr. Hood has recently given to the profession he reviews the results of an experience of old and recent injuries which extends, he tells us, to 23,500 separate cases, and relates the results of his attempts so to modify early treatment as to prevent the occurrence of those crippled conditions which in his first publication he showed the way to cure. He tells us that during the first few years after the publication of his book on bone-setting he was naturally called upon to see old injuries in larger proportions than recent ones, but that before long cases of the latter kind came under his notice with sufficient frequency to call for complete reconsideration of the methods commonly employed in dealing with them. He points out that an approach to his methods which he began to practise 20 years ago was advocated in 1895 by Dr. J. Lucas-Championnière, and still more recently by several English surgeons, but he doubts whether any of these gentlemen admit his view of the physiological principles on which the treatment should depend or the extent to which friction and early movements of the affected part should be carried. On all these points as well as on the actual conditions of sprains and of ruptured muscular fibres, and on the methods by which such injuries may be prevented from becoming causes of prolonged disability, Dr. Hood writes with great clearness; but so concisely and with so complete an absence of superfluous verbiage as to render quotation extremely difficult. We can cordially recommend his work to the attention of every practitioner who is liable to be called upon to deal with injuries, especially with injuries of the class likely to arise from the modern practice of athletics; and we believe that very few readers will either be inclined to lay it aside until they have finished it or will fail to obtain valuable practical suggestions from its pages.

The Refraction and Motility of the Eye. For Students and Practitioners. By WILLIAM NORWOOD SUTER, M.D., Assistant Surgeon to the Episcopal Eye, Ear, and Throat Hospital, Washington, D.C. Illustrated with 101 engravings in the text and four plates in colours and monochrome. London: Sidney Appleton. 1904. Small 8vo, pp. 390. Price 9s. net.

THE work is divided into four parts, the first part treating of the theory of refraction; the second describing the refraction and motility of the normal eye; the third giving an account of the methods of determining the refraction of an eye with their application to cases of hypermetropia, myopia, and astigmatism, with a chapter on anisometropia and upon presbyopia and anomalies of accommodation; and the fourth part dealing with disorders of motility which are considered under the two heads of non-paralytic disorders of muscular equilibrium and paralytic disorders of motility. Into a comparatively small space Dr. Suter has compressed a large quantity of information, and although owing to the number of books dealing with the refraction of the eye it is difficult to state in other language than such as is to be found in the ordinary text-books on optics the essential facts of the reflection and refraction of light, the change of direction impressed upon luminous rays by lenses and prisms, and the course pursued by such rays through the media of the eye under conditions which lead to the formation of a normal or distorted image of the external world, yet Dr. Suter manages to give a certain freshness to his expositions, whilst his familiarity with the subject enables him to form and to express his opinion upon disputed points. Thus, to take one example only, in regard to the rival theories of Helmholtz and Tscherning upon the nature of the accommodation of the eye to objects at different distances which has been the subject of much discussion and still divides the opinions of experts, he supports Helmholtz's views, remarking that "the diminution of spherical aberration which occurs in accommodation, as shown by Tscherning, is a direct sequence of the peripherally diminishing curvature and consequently it is not inconsistent with Helmholtz's theory. As regards Tscherning's experiments upon the eyes of animals it should be noted that traction made upon the suspensory ligament can cause increase of curvature at the summit only when the lens has a hard nucleus surrounded by soft cortical matter as may be found in the lens of the adult ox, the animal upon which Tscherning's examinations were made. In the lens of the calf traction causes flattening at the summits of the surfaces. It is evident, therefore, that Tscherning's experiments do not substantiate his theory, for the solid nucleus which is necessary (as admitted by Tscherning) in order that traction may cause an increase of curvature does not exist in childhood—the period of greatest accommodative activity"—a very sound argument and conclusion.

The methods of determining the refraction of an eye are fully described. These are divided into subjective and objective methods, the former including those in which optometers are employed, some of which are based on the action of a convex lens, others on the principle of the opera glass, others on Scheiner's experiment, others on the property of chromatic aberration, others on the measurement of the retinal diffusion-circles, others on the movement of the diffusion-image on the retina, and others based upon visual acuteness and its assistance when defective by means of

lenses. The objective methods include the determination of the refraction of the eye by the direct and indirect methods of ophthalmoscopy, by skiascopy, and by keratometry. In each instance Dr. Suter explains the mode in which the test is applied, as well as in many instances the advantages and disadvantages of the test, in actual practice. We have mentioned these tests to show how carefully this ground has been worked over, especially in America, and to indicate to the student how large is the field on which he is entering in commencing the study of the diseases of the eye when so much is to be learnt on the subject of refraction alone. The fourth part of the book devoted to squint is carefully and clearly written; the various methods of tenotomy and of advancement of the tendon of the rectus muscle are well explained and illustrated. We recommend Dr. Suter's work as an excellent *résumé*, without being too abstruse, of the present state of our knowledge of the normal and the abnormal refraction of the eye.

Mrs. Piper and the Society for Psychical Research. Translated and slightly abridged from the French of M. SAGE by NORALIE ROBERTSON, with a Preface by Sir OLIVER LODGE. London: R. Brimley Johnson. 1903. Pp. xviii.–187. Price 3*s.* 6*d.* net.

IT is not very easy to determine what should be done by the critic in the case of a book of this description. To ignore it entirely is not wise, because if this be done it is said that the medical profession know nothing about certain strange mental phenomena and decline to be taught by people who devote their time and abilities, such as they are, to the investigation of these things. If, again, such a book as this be dismissed, as it positively deserves, with a brief sentence it may be thought that no study has been devoted to it or that it opens a new world at which the medical mind shrinks back aghast and tries to disguise its wonder by a passing jest. If a still different course be taken and the work be discussed as a serious contribution to mental science the medical reader would, for his part, have real cause for complaint.

The claims which this little volume has for passing notice are two. In the first place it contains an introduction by Sir Oliver Lodge and in the second it will serve to show the general reader in a few words the curious position taken up by the friends of Mrs. Piper and will enable him to form his own opinion on the deductions and inferences which they make from the observed phenomena, if it be granted that a correct account has been given of the latter. Sir Oliver Lodge's introduction is a little apologetic. He had consented to write the preface "with some misgivings" before he saw the book and "now that I see it in its English dress," he adds, "I find my misgivings justified." However, the author, M. Sage, he says, speaks deprecatingly of his purpose in writing it and calls it "un modeste ouvrage de vulgarisation," and from this point of view Sir Oliver Lodge considers it successful. He goes on to say that he wishes to guard himself from any endorsement of the sentiments and comments of M. Sage, and these appeared to him "less appropriate" when they were translated, although "as they were intended in the original they were not out of keeping." This it must be admitted is not an easy argument to follow but we may take it that Sir Oliver Lodge considers the book a fair one so far as Mrs. Piper is concerned and that it will tend to the popularisation (vulgarisation) of her work.

Mrs. Piper is the wife of an American shopman, is of a home-loving disposition, of little education, commonplace, "sometimes even trivial" in her conversation, and her personality is attractive. She came to England and Professor Charles Richet had a sitting with her; she went into a "trance," her voice changed, and, lo! "she is no longer Mrs. Piper but Dr. Phinuit who speaks in a loud masculine voice in a mingling of negro patois, French, and American dialect." M. Sage explains that the Phinuit personality is what spiritualists call "a control," that by control is meant the mysterious being who is supposed to have taken possession of the organism of the medium, and he asks whether the controls are only "secondary personalities" or "disincarnated human spirits." Without answering his own question he says, "in either case they must have a name." Now, on this point we are inclined to join issue. Is there any reason why Mrs. Piper in the circumstances described shall not keep her own name? We need not follow the career of Dr. Piper Phinuit in detail and habitual readers of this sort of literature know what to expect. They will be pleased to come across their old friend Stainton Moses who had, at the time he was sent for, been about three years "in the spirit." We doubt if the scientific side of psychical research is well served by the publication of this book.

Infant Feeding. By LOUIS FISCHER, M.D. Third edition. With 54 illustrations. Philadelphia: F. A. Davis Co. 1903. Pp. 357. Price $1.50 net.

A PARALLEL reading of this edition and of the one which preceded it by no means convinces us that Dr. Louis Fischer has effected any genuine improvements in his work on infant feeding. It is true that he has modified certain of his views, notably on laboratory milk and on the value of Gaertner's milk, and has introduced generally more accuracy and precision into his methods, but the subject matter is so badly arranged and consists to so disproportionate an extent of quotations which are borrowed from other authors that it is impossible to regard this edition at all events as anything beyond a compilation, and not a very satisfactory one at that. It is difficult to suggest a reason for many of these literary plagiarisms; for instance, considerable space is devoted to quotations which would certainly discredit the use of such old nursery friends as lime water, bicarbonate of soda, and sugar of milk, if they could be taken seriously, and yet in face of the prominence which is given to these somewhat startling pronouncements we find in other sections of the book that the use of these commodities is warmly advocated. We only mention these seeming contradictions, which are unimportant in themselves, as illustrations of the general want of consistency which so markedly detracts from the merits of Dr. Fischer's book as a practical guide to the feeding of infants. It is difficult to determine which, if any, of the many artificial methods described in these pages is the one which Dr. Fischer recommends for the ordinary routine feeding of infants. He claims, however, that Coits's decimal method is the simplest and most easily applied system for the home modification of milk. For this method three solutions are required—a 10 per cent. cream, a 10 per cent. saccharated skimmed milk, and a 10 per cent. solution of sugar. By combining these solutions in various proportions milk mixtures of various percentage composition may be obtained. The method does not appear to us quite as simple as Dr. Fischer would have us believe; indeed, the mathematical calculations which are involved in the working out of the formulæ strike us as particularly complicated. The method has, however, the extreme advantage of being a scientific one and one which, though perhaps never absolutely exact, possesses only a small margin of possible error. Two chapters which are devoted to the subjects of milk substitutes and milk idiosyncracies in children deal respectively with two most important and difficult problems. Both of these chapters contain some very useful hints although neither of them can be regarded as complete solutions to the questions involved. In speaking of the unpopularity in

certain quarters of milk laboratories and their methods, the author regards it as possible that certain of the unsatisfactory results which have been noted may be due to the overheating of the milk. He urges, therefore, that those who employ these laboratories should insist upon "having the formulæ compounded by using raw milk and fresh cream"; the natural living qualities of the milk may thereby be preserved thus rendering it more assimilable than when it has been subjected to prolonged heating. He anticipates that if this simple precaution be taken even the strongest opponents of this method may yet be convinced of the superior advantages of milk which has been handled and modified with the care which is usually bestowed upon it at milk laboratories. We notice on p. 140 the curious statement that glycerine is "an oil," and as such indicated in children requiring fat; and we further notice that this "oil" is recommended to be injected to the amount of five ounces mixed with 20 ounces of warm water into the infant's rectum when suffering from constipation. Apart from the heroism of this proceeding, it strikes us as one which would be rather expensive for routine or hospital practice. As will have been gathered from the preceding remarks we do not regard Dr. Fischer's book as a good one on the subject of infant feeding. It is controversial without being critical and, although it contains an immense amount of sound information, the information is so badly arranged that it ceases to be instructive.

A *Text book of Pathology*. By ALFRED STENGEL, M.D., Professor of Clinical Medicine in the University of Pennsylvania; Physician to the Philadelphia Hospital. With 391 illustrations in the text, many of them in colours, and seven full-page chromolithographic plates. Fourth edition, thoroughly revised. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 933. Price 21s.

IN reviewing a work that has reached a fourth edition but little need be said as to its general nature and scope. Dr. Stengel has endeavoured to continue to present the subject of pathology in as practical a form as possible and always from the point of view of the clinical pathologist. He has succeeded in his design in a most admirable manner. In the preface to the present edition Dr. Stengel remarks that its preparation has been rendered difficult by the mass of important work that has appeared in the last two or three years. We can fully appreciate the embarrassments which he encountered. During that period an immense amount of work in pathological investigation has been accomplished. Dr. Stengel, however, has constantly kept before him the necessity of incorporating only demonstrated facts and avoiding unproved hypotheses. In thus acting he has done wisely. It is very confusing to the student to be presented with theories and suggestions on abstruse subjects none of which has definitely been proved to be correct. Such discoveries may be interesting to an expert but are useless for purposes of instruction. The section of the book dealing with general pathology has required the greatest care and has been most extensively revised, several of the important chapters having been practically rewritten. Ehrlich's theories of immunity and allied processes are fully considered and explained in as lucid terms as such an involved subject will permit. Dr. Stengel is of opinion that "Ehrlich's side-chain theory" explains the facts regarding the action of toxins and the formation of antitoxins better than any that has been suggested and he further adds that all the steps in this theory have been practically demonstrated. The chapter on inflammation has received close attention and now contains a *résumé* of the latest investigations on the subject. In discussing typhoid fever attention is drawn to the fact that local or general typhoid infection may occur without the intestinal lesions or usual clinical features of typhoid fever. In such cases local inflammatory lesions, suppurations or necroses, or septicæmia have been observed. A short description is also given of paracolon or paratyphoid infection. Cases have been reported resembling typhoid fever clinically but in which the Widal reaction was persistently absent and in which bacilli closely resembling the typhoid or colon bacillus, though differing in some essential particulars, were isolated from the blood and tissues. Dr. Stengel asserts that the bacilli differ from the bacillus of typhoid fever by their ability to produce gas in glucose-containing media and to produce alkali in nutrient media. They differ from the bacillus coli communis by not coagulating milk, by not fermenting lactose, and by failing to form indol. The remarks on tuberculosis have been carefully arranged so as to include most of the latest researches. The relation of human to animal tuberculosis, however, is only briefly touched upon. A short description is given of the smegma and other acid-proof bacilli. The etiology of yellow fever is discussed. The experiments of Reed and Carroll naturally receive notice, for these observers demonstrated the importance of mosquitoes as agents in the transmission of the disease. It was definitely proved that a special form of mosquito—the stegomyia fasciata—carries the contagion from one person to another. The bacillus icteroides, discovered in 1897 by Sanarelli, seems to be a secondary invader and not the cause of the disease.

The second half of the book (on Special Pathology) has been also subjected to considerable revision, although extensive alterations have not been so necessary as in the first portion of the work. The chapter on Diseases of the Blood has been brought up to modern requirements. A classification of the varieties of leucocytes is exceedingly difficult as transitional forms are abundant. The classification introduced by Ehrlich and his pupils is here adopted and while it is not entirely satisfactory it has one advantage over others—viz., that it is comparatively simple. The pathological changes occurring in the red corpuscles are also described. Investigations into the properties and alterations of the erythrocytes have necessitated the introduction of some new terms, such as "anisocytosis" and "hemokiniæ," which in due time will become familiar. A few observations are also made on the pathological changes in the plasma. These are mainly of a chemical character and consist of the presence of abnormal substances or of normal constituents in excessive quantity. A chapter has been added on the Technique of Pathological Methods. We must conclude with a few words of congratulation with regard to the illustrations. They are admirable. In this edition many of the old ones have been replaced by new and a number of plates have been added where more ample illustration has seemed advisable. We may draw especial attention to the plates illustrating the diseases of the spinal cord which are beautifully executed.

LIBRARY TABLE.

The Practical Care of the Baby. By THERON WENDELL KILMER, M.D. Philadelphia: F. A. Davis Co. 1903. Pp. 158, with 68 Illustrations. Price $1. This little book adds one more to the list of works on the care of infants which owe their authorship to a member of the staff of the Baby's Hospital in New York. Evidently no trouble or expense has been spared to make it a thoroughly attractive book. It is lavishly provided with excellent illustrations, printed in large type and we imagine in every way suitable for young mothers who "know absolutely nothing about the care of a baby." A considerable amount of space—we are inclined to think a rather disproportionate amount—is devoted to the description and illustration of babies' and children's clothing. The directions for

feeding, which is always the most important feature in a book of this kind, are taken from Dr. Emmett Holt's "Care and Feeding of Infants"—not, however, from the last edition of that little work but from one of the earlier issues. This, in our opinion, shows a wise discrimination, for the method which Dr. Holt first advised is altogether simpler and more practical than the system he now suggests. There has been pressed into a comparatively small space an immense amount of information on such subjects as airing, exercise, sleep, teething, the condition of the bowels, increase in weight, and a host of other matters about which even mothers of large families often remain ignorant to the end. About one-third of the volume is given up to the consideration of minor ailments and emergencies, with full instructions as to what to do should such arise. In every respect we regard "The Practical Care of the Baby" as a most excellent little book.

The Knight's Hospitallers in Scotland and their Priory at Torphichen. By GEORGE THOMAS BEATSON, M.D Edin., C.B. *Citizen* Office, Glasgow: James Hedderwick and Sons. 1903. Pp. 33. Price 2*s.* 6*d.* net.—Dr. Beatson is the chairman of the Council of the St. Andrew's Ambulance Association and the question arose as to whether this association should affiliate with the Order of St. John of Jerusalem. Dr. Beatson therefore compiled a paper upon the history of the latter order in Scotland and read it before a meeting of the St. Andrew's Association which was held in February, 1903. The book before us is the said paper somewhat enlarged. Dr. Beatson commences by giving a description of the origin of the order and refers to the Amalfi merchants as building a hospital in Jerusalem about 620 A.D. That gossipy pilgrim Felix Fabri, in his Evagatorium[1] circa 1480 A.D., gives the date of the foundation of the Amalfi Hospital (Maria de Latina) as in the reign of Charlemagne—i.e., about 800 A.D.—and the date of the Hospital of St. John the Almoner as 1118. Further, he says that the knights were not under the patronage of St. John the Baptist until after they went to Rhodes. Dr. Beatson, however, says that the Jerusalem House was dedicated to the last-named saint. We hold no brief for the accuracy of Fabri and doubtless Dr. Beatson has had access to many other documents bearing on the early history of the Order. The Knights went to Scotland by invitation of King David I. and they were an offshoot from the English Langue. They established themselves at Torphichen where they built a preceptory in 1124 A.D. The tower and the two transepts still remain and we are glad to see are cared for by the present Lord Torphichen. Within the domain of the preceptory were five sanctuary stones, two of which are still to be seen. The preceptory, like so many other admirable institutions, came to an end at the Reformation, and small wonder too, for the last preceptor was a personal friend of Knox. Dr. Beatson's interesting work concludes with an urgent appeal for union between the Order of St. John of Jerusalem and the St. Andrew's Ambulance Association.

Sayings of K'ung the Master. Selected, with an introduction, by ALLEN UPWARD. London: The Orient Press. 1904. Pp. 50. Price 1*s.* net.—This little book is one of a series, entitled "The Wisdom of the East," which deals more or less with the religion, the philosophy, and the ethical code of Oriental nations. K'ung-fu-Tzee, or K'ung the Master, was Latinised by Western missionaries into Confucius and this teacher is generally said to have been the founder of a religion. According to Mr. Allen Upward he was nothing of the kind but merely a teacher. He refused to discuss the supernatural because he knew nothing about it. Like St. James he considered that faith without works is dead. Though he himself said, "At 50 I knew the decrees of heaven," he contented himself with teaching men how to live on this earth, teaching them partly by precept but mainly by example, and his ideal was good government in the interest and for the happiness of the humble. The selections given are chiefly from the translation of the Analects by Legge.

[1] Hassler's edition, Stuttgart, 1843, vol. ii., pp. 246 and 274.

JOURNALS AND MAGAZINES.

The Practitioner.—The issue of this magazine for May contains some unusually interesting and attractive articles. Dr. Guthrie Rankin writes a philosophical essay upon old age which might be perused with advantage outside of, as well as within, the ranks of the medical profession. Dr. Leonard L. B. Williams contributes an article entitled "Some Aspects of Obesity." Dr. Williams's views upon the efficiency of slow feeding, cold baths, proper limitation of clothing, &c., are sound and well put and the article should be a useful corrective to the many "fads" that are apt to gather round this question of fat. Dr. H. D. Rolleston provides a careful review of recent work on gastric affections, giving the impression that whatever has been written lately in any tongue has not escaped his notice.

The Journal of Physiology. Edited by Sir MICHAEL FOSTER, K.C.B., F.R.S., and J. N. LANGLEY, F.R.S. Vol. XXXI., No 2. London: C. J. Clay and Sons. May 3rd, 1904. Price 6*s.* 6*d.*—The articles contained in this number are as follows:—1. On the Formation of Prussic Acid by the Oxidation of Albumins, by R. H. Aders Plimmer, D.Sc., Grocers' Company's Research Student. Dr. Plimmer shows that by the oxidation of albumins with Neumann's acid mixture, or after treatment of the products of hydrolysis, or with potassium dichromate and sulphuric acid in suitable proportions prussic acid is formed, but it does not appear to be formed from the oxidation of the amino-acids. 2. On the Histological Changes produced by Injection of Adrenalin Chloride, by W. B. Drummond, M.B., C.M. Edin., with four figures in the text. Dr. Drummond points out that the histological changes observed by him are due to two factors: the first is the influence of adrenalin upon blood pressure and the second its direct toxic action, the former displaying itself in congestion of the viscera and in the occasional presence of hæmorrhages and of serous effusion and the latter exhibited by the changes in the cells of glandular organs and especially of the liver and kidney. 3. Observations on the Influence of Adrenalin Poisoning on the Liver, with special reference to the glycogen, by W. B. Drummond, M.B., C.M. Edin., and D. Noel Paton, M.D. Edin., with two figures in the text. The glycogen, it is shown by these observers, is diminished in acute, but not invariably in chronic, adrenalin poisoning. The lobules in acute adrenalin poisoning frequently show degenerative changes on their central zones. 4. On the Adaptation of the Pancreas, by F. A. Bainbridge, M.B. Cantab., M.R.C.P. Lond., Research Scholar of the British Medical Association. Dr. Bainbridge shows that under normal conditions the pancreas of dogs contains no lactase though this substance is contained in extracts of the intestinal mucous membrane. Yet when dogs are fed for two or more weeks on a milk diet their pancreatic juice obtained by means of secretin invariably contains lactase. He believes that lactose acts upon the intestinal mucous membrane, causing it to produce some substance which is carried in the blood-stream to the pancreas, stimulating that gland to form lactase. 5. On the Physiological Action of the Alkaloids of Jaborandi Leaves, by C. R. Marshall, with 19 figures in the text. Mr. Marshall finds that jaborandi leaves contain three alkaloids—pilocarpine, isopilocarpine, and pilocarpidine. Pilocarpine

resembles in its action the effects of electricity on the vagus and this action is counteracted by atropine. Isopilocarpine acts like a weak pilocarpine and pilocarpidine produces still weaker but similar effects. 6. On the Innervation of the Ileocolic Sphincter, by T. R. Elliott, Coutts Trotter Student of Trinity College, Cambridge, with nine figures in the text. Mr. Elliott demonstrates that the junction of the small and large intestine is controlled by a muscular sphincter not by a mechanical valve. Stimulation of the sympathetic causes the sphincter to contract but inhibits the circular muscle in the wall of the ileum and the colon. In the cat the constrictor fibres issue chiefly from the thirteenth thoracic and first and second lumbar roots. This number also contains the Proceedings of the Physiological Society for March.

The British Journal of Children's Diseases. No. 1, Vol. I. London: Adlard and Son. Price 1*s.*—The impetus which has been imparted to the progress of pediatrics in this country by the active operations of the Society for the Study of Diseases in Children has rendered the occasion opportune for the publication of a journal which is exclusively devoted to this important branch of medicine. The first number of the *British Journal of Children's Diseases* was published in January of this year and will continue to appear monthly under the editorship of Dr. George Carpenter. It is practically certain that a journal conducted on the lines which are foreshadowed in the first number will be actively supported by a large and increasing number of readers. The first number contains several excellent original articles, notably by Dr. James Taylor on a case of Hemicrania, by Dr. Edmund Cautley on Congenital Stenosis of the Pylorus, by Mr. Clinton T. Dent on the same subject, by Dr. G. A. Sutherland on Intussusception and Henoch's Purpura, and by Mr. T. Glenton Kerr on the Administration of Children's Hospitals. The number also contains under the title of "Excerpta Puerilia" a number of miscellaneous notes on matters in the domain of pediatrics which will be of general interest.

New Inventions.

A NEW BEDSIDE SPITTOON.

IN the ordinary earthenware bedside spittoon with a loose funnel some of the sputum usually dries on the latter and becomes a source of danger in addition to presenting an unsightly appearance. The chief objection to the forms with hinged lids is the difficulty of keeping them clean,

FIG. 1.

FIG. 2.

for sputum lodges and dries in the hinge which is speedily destroyed if attempts are made to sterilise the spittoon by boiling. The various spittoons with loose paper or card linings are advisable but their cost prevents their extensive use in hospital practice. Whilst resident medical officer at the Mount Vernon Hospital for Consumption at Hampstead I designed a bedside spittoon which has been made by Messrs. Allen and Hanburys of 48, Wigmore-street, London, W., and has been in use at the hospital for some months. It is strong, being made of enamelled iron, and is not unsightly. It is also cheap (12*s.* 6*d.* per dozen) and easily kept aseptic as it is not injured by boiling and it has no crevices in which sputum can lodge.

As will be seen from the illustrations the handle is placed lower down than is usual and from the rim above it a small curved projection passes backward and engages in a small slit in the lid, forming an efficient hinge. The lid is easily removed and is opened by pressing on its projecting process when raising the cup.

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Looking Back.

FROM

THE LANCET, *SATURDAY*, May 20, 1826.

NOW the whole of the *alimentary canal*, (like the *air-passages*,) is lined by a *mucous membrane*, which is subject to the affections that belong to this kind of structure in general; namely, inflammation, with its consequences, and which has received different names, according to the particular part it occupies. These, which are mere *varieties*, have been considered as different *species* of disease; although, pathologically considered, they are essentially the same, and require a treatment, in all essential points alike, doubtless with some modifications, arising out of their relative connexion with other parts. We have no general term in common use like that of catarrh to express an inflammation of the lining membrane of the alimentary canal altogether; but the affections of particular parts of it, have had *specific* names given to them. Thus, when that part of the mucous membrane which lines the mouth, is affected with inflammation, it constitutes the disease termed *aphtha*, or the *thrush*. When the fauces are similarly affected, the disease is termed *cynanche* or *angina*; in common language, the *sore throat* or quinzy.

In the œsophagus and stomach, the affection is termed *cardialgia* or *heart-burn*, in the small intestines, *diarrhœa*; in the large intestines, *dysentery*. And when the whole alimentary canal is at once similarly affected, the disease has been termed *cholera morbus*.[1]

[1] Excerpt from lecture on the Theory and Practice of Physic, delivered by Dr. Clutterbuck in the theatre, General Dispensary, Aldersgate-street.

NATIONAL SANATORIUM FOR CONSUMPTION, BOURNEMOUTH.—The annual general meeting of governors of this charitable institution was held in London on May 12th at the Westminster Palace Hotel, the Right Hon. Arthur F. Jeffreys, M.P., occupying the chair. The annual report of the committee of management for the year 1903, which was unanimously adopted, stated that the accounts showed a deficiency of £305, as compared with a deficit of £540 the previous year. As a result of the special appeal the annual subscriptions showed an increase of £139 and donations an increase of £514. The committee regretted that the annual subscriptions did not show a larger increase, as the income was still insufficient to meet the current expenditure. It desired particularly to add that by the additional accommodation which is being provided new annual subscriptions to the amount of at least £500 were urgently needed. During the year 225 patients were admitted, of whom 182 were discharged improved, many being fitted to return to their occupations. 64 patients were continued from 1902, so that the total number under treatment last year was 289. The average length of stay in the sanatorium was 11·8 weeks. Mr. Robson-Burrows, a member of the committee of management, informed the meeting that the plans and specifications for the new extension of the sanatorium had been prepared and that tenders were being invited for carrying out the work.

THE LANCET.

LONDON: SATURDAY, MAY 21, 1904.

The Future of Medical Education in London.

THE oration by Sir ISAMBARD OWEN before the Medical Society of London, which we publish at p. 1399 of this issue, was peculiarly appropriate at a time when on all hands it is admitted that medical education is passing through a trying period of transition. Although many look hopefully to the future when all difficulties shall be smoothed away, others feel a certain degree of anxiety lest the schemes upon which reliance has been placed may never be carried into effect or may so far revolutionise medical teaching that disastrous consequences may ensue. Sir ISAMBARD OWEN commenced his oration with a pithy anecdote to demonstrate the lack of general interest in science exhibited in this metropolis as compared with continental cities, and there can be no doubt that in London we are so accustomed to the modesty of our greatest men of science that when living they pass unnoticed in the street, and when dead their names are only gratefully remembered by their fellow workers. The desirability of erecting statues or other memorials does not occur to their followers who hold that their masters still live in the memory of their work, while money may be better spent in advancing science or in alleviating distress. Different nations have different methods of expressing appreciation. This, however, formed only the introduction of Sir ISAMBARD OWEN'S argument. His chief contention was that, as compared with other nations, there is in this country a lamentable lack of public interest in education. Considering that the political atmosphere has recently been so much agitated on this very subject it is interesting to note that the average Englishman only gets excited about education when it concerns a point of religion. In contrasting the general condition of education in this country with that obtaining abroad most effective use was made of the report of the Mosely Educational Commission to the United States of America, from which can be gathered much that is instructive and much that is depressing. The report is instructive in showing the appreciation of the value of education and the readiness of the State and of private benefactors in the United States to contribute enormous sums to improve what is rightly regarded as an "essential condition of prosperity." It is depressing to us as a nation when, with certain isolated recent examples, the American spirit is contrasted with the grudging spirit with which appeals for educational improvements are regarded in this country.

While this is true of all forms of education, the public apathy is perhaps most marked towards medicine, and we believe Sir ISAMBARD OWEN is right in attributing this to want of knowledge rather than to wilful indifference. To some extent, however, it must undoubtedly be assigned to the spirit of honourable rivalry which has so long existed between the different metropolitan medical schools. This rivalry has led to needless multiplication of teaching institutions and as the character of education has gradually changed so the need of expensive laboratory accommodation has grown. The slow evolution of the London Schools of Medicine is emphasised by Sir ISAMBARD OWEN—it was not born or made but simply "grew spontaneously in response to a need." At the present time the growth has been so great that it is becoming a source of weakness rather than of strength and all concerned in the welfare of London medical education are restlessly awaiting the advent of one or more benefactors. The buildings are there but without a preliminary endowment they cannot become self-supporting. Not long since we referred to the munificent gift of Sir DONALD CURRIE to University College. It will be remembered that before the incorporation of this College as an integral part of the University of London it was necessary to dissociate the hospital and the subjects of clinical study from all financial connexion with University College.[1] Sir DONALD CURRIE'S gift provided for the erection of buildings for a school of advanced medical studies connected with the hospital, leaving the subjects of preliminary and intermediate medical study to be taught within the College. Sir ISAMBARD OWEN believes that the division of the curriculum into two nearly separate portions, the one mainly professional and the other purely academic, affords some ground for hope in the future, and he looks to the University of London as a central teaching authority to assist, to lead, or to coördinate the scattered educational agencies. The plan submitted is, however, open to some misunderstanding. What is hoped for is not quite clear. We are told that while London is asleep the provinces are moving and that disaster must follow unless London awakes to some sense of its responsibility. This supposed condition of somnolence, this sleeping sickness, appears only to mean that the best clinical teachers with the best clinical material may, unless some relief is forthcoming, find themselves without anyone to teach. Surely this danger has been painfully impressed for many years by the diminishing entries at the London medical schools. It is not the teachers who need rousing but those from whom it is hoped that endowment may be derived. The teachers realise the position but London appears to be too vast, too cosmopolitan, to take cognisance of the present needs of medical education and of the danger of losing the opportunity of successfully competing with the provincial schools, some of which have received munificent endowments. The solution offered by Sir ISAMBARD OWEN is the speedy establishment as part of the University of London of a public institute of medical sciences to undertake teaching in physics, chemistry, biology, anatomy, and physiology for the purposes of medical students. This scheme has been drawn up by the Faculty of Medicine of the University and officially adopted by the Senate. All that is wanting is to find the funds and these have been estimated at £375,000. The scheme is bold but there is one small danger. In the earlier part of the oration reference is made to the American disposition to "regard buildings and sites as of more

[1] THE LANCET, March 26th, 1904, p. 880.

importance than men," and this is certainly suggestive. When, if ever, the new public institute is in full work it must inevitably enter into competition with those medical schools which continue to teach the same subjects, and it must also draw its teaching staff from them since previous practical experience is to be desired. The University of London will not follow American example, we trust, in attaching more importance to the edifice than to the *personnel* of the teaching.

The oration deserves thoughtful study, especially in connexion with the words of Mr. A. PEARCE GOULD who, in seconding a vote of thanks, remarked that a public appeal was likely to meet with more ready response if it resulted from the coöperation and fusion of the interests of the medical schools than if made merely to benefit one institution. The public, who may rightly plead weariness of requests to support this or that hospital, may yet come to the rescue in favour of medical education as a whole if the matter is put bravely before them. The whole subject is one of extreme difficulty and must undoubtedly be met in a broad spirit. Sir ISAMBARD OWEN clearly hopes that in the future the various medical schools will be content to receive only those students who have already passed all the subjects of preliminary and intermediate medical study and thus will be freed from the necessity of the present wasteful expenditure on these subjects. The scheme is deserving of support if the creation of a new building and a new organisation under the control of the University of London is really the only means by which an appeal for endowment can be successful. It is impossible, however, to read the admission that the present "buildings of the schools would in the aggregate suffice for the needs of many a renowned university" without feeling regret that they should be superseded and converted to other uses.

A Russian Medical Man on Medical Practice.

A LITTLE while ago we devoted a leading article to the consideration of private practice as it appeared in a novel, the central figure of which was a general practitioner in a country town of Germany.[1] A Russian book translated into English under the title of "The Confessions of a Physician" attracts us again to view a very similar subject. Here, however, the field is perhaps a wider one, for it is rather medical practice as a whole and the ethical position of a medical man in the community at large than the trials of any particular branch of the profession that the Russian author takes for his theme. If the German's book produced an impression that was on the whole painful and discouraging his Russian colleague is able to provide us with no more cheerful aspect of medical practice. Much must be allowed for the obviously morbid and too sensitively introspective nature of the author himself. He is conscientious, scrupulous, and self-accusing to the last degree and suffers acutely for mistakes which, if they had happened to others, he would have been ready to pardon and to explain. Moreover, he describes accurately scenes and actions which, though a necessary part of medical practice both in and out of hospitals, yet in their description may lay the author open to the charge of grossness. We by no means proffer this charge, yet we regard certain passages in this book as rendering it entirely unfit for the perusal of the non-medical reader.

To the medical man the author appeals by his obvious sincerity and by his determination to omit nothing, whether discreditable to himself or the reverse, of the impressions which were made upon him from the first days when he began his professional studies. In these days, as a young man is apt to be, he was overwhelmed by the material side of things, coming to the facts as science revealed them and incapable as yet of realising a spiritual aspect even to that which is apparently merely gross. Thus his anatomical studies distorted for him all human creatures. "People who were near and dear to me assumed a dual quality: that young girl, for instance—there is so much originality and attractiveness about her! When in her presence I feel happy and light of heart, but at the same time all that goes to make her is well known to me and there is really nothing extraordinary about her; her brain is corrugated by the same convolutions such as I have seen upon hundreds of brains; her muscles are permeated through and through with fat which makes the dissection of feminine corpses such an unpleasant task; in a word, there is nothing in her either attractive or suggestive of poetry." At this stage of his career he is surprised, shocked, and depressed by the moral agonies to which he thinks female patients must often be exposed by examination in hospitals. Here the English reader will find his sympathy but little stirred for if VERESAEFF'S account be true then there must be in Russian hospitals a great want of that consideration and careful decency which, we are glad to know, obtain generally in the teaching of gynæcology in this country. Advancing a little further along the path of medical study our author now is almost driven to despair by realising how many conditions there are for which even the most enlightened medicine and surgery can offer no relief. His anger is like that of the uninstructed son who declares all medical men useless because his father is dying from malignant disease. Such anger might with equal reason be directed against nature herself. It would be as sensible to revile Omnipotence for permitting such diseases as medicine for being incapable of curing them. Medicine does not claim infallibility or omnipotence. Ignorance thrusts these upon her shoulders and then raves when medical science does not rise to performances which she never claimed to achieve. VERESAEFF, of course, with further study, is reconciled by the sight of how very much medicine and surgery *can* do to the thought of the large amount which they still cannot. With regard to the examinations which complete his curriculum as a student and allow him to pass into the world as a qualified practitioner, the Russian author makes some scathing comments which are applicable in other countries besides his own. He objects to the theoretical as opposed to the practical value of the tests and concludes that "if you were to subject after the lapse of five years a fully fledged doctor to the same ordeal, without previous warning, he would fail ignominiously. ..... Not a single eminent physician would be able to pass his examination a second time without laborious preparation unless his inquisitors showed leniency

[1] THE LANCET, April 16th, 1904, p. 1066.

—i.e., were to require a real knowledge of medicine, not the acquisition by rote of endless minutiæ of no value whatever to anyone." Launched into practice in a small governmental town of Middle Russia, VERESAEFF finds that his troubles only now really begin. He has never held a resident appointment in a hospital and has consequently had no real experience in the treatment of disease or in the management of patients. The effect of his doubts, his anxieties, and his mistakes upon a man who had enough intelligence to realise them and more than enough conscientiousness to suffer from them is such that he relinquishes practice in order to gain further real experience in hospital work. His reflections are bitter enough upon a system which has labeled him legally fit to practise without necessitating his being in any way actually efficient. "Who would think of sending out to battle soldiers who had only seen others shoot? Yet doctors enter upon life clumsy recruits unable to handle their arms."

VERESAEFF'S next mental tortures—it will be realised that his early experiences in medicine afforded him anything but peace of mind—arose from the contrary results of therapeutic experiment. Drugs extolled on one side he finds deplored upon another and the treatment of one eminent authority is pronounced disastrous in the hands of another equally distinguished. At last, however, after painful years of unpaid hospital work and laborious private practice he finds his feet. "It was true that science gave me less than I had anticipated and that I was no genius. But would I be in the right to renounce my diploma? Were we average doctors so utterly useless? ..... We can be useful and accomplish much, on condition of rigid adherence to the old maxim *primum non nocere*. And, in the next place, we must once and for all discard the notion that our work consists in careless and unquestioning obedience to the mandates of science. We must realise how complex and responsible is the work before us, work unceasingly at self-improvement, and never rest or pause in our quest for truth. All this is terribly hard and many may faint beneath the burden; but as long as I find strength to bear it honestly I have the right to remain at my post." We should like to deal with those passages in which the author shows how little the medical man's difficulties are comprehended and sympathised with by the average person and to relate the cases which he quotes of unfair charges and newspaper comments upon medical men. Space, however, forbids us to go further than to recommend this book as one which, if it contains a great deal which cannot be read with advantage by the ordinary reader, is at any rate a work of the highest interest to the medical man and likely to stimulate in him only the most laudable ambitions and reflections.

The Oliver-Sharpey Lectures.

IT is always pleasing to connect with recent researches the name of one who has contributed to them by the stimulating influence of his teaching. In the Oliver-Sharpey lectures lately delivered at the Royal College of Physicians of London[1] Dr. GEORGE OLIVER, before approaching his subject, paid graceful tribute to his indebtedness to the lucidity and impressive character of the work of WILLIAM SHARPEY and reminded us that the aim of the endowment of these lectures was to foster the application of physiolcgical knowledge to the prevention, alleviation, and cure of disease and the prolongation of life. The intimate connexion between physiology and medicine has long been recognised but those who labour in the interesting field of research must always be grateful to the clinician who is able and willing to extend the researches into the domain of practical medicine and to indicate their bearing upon alterations occurring in disease. It must be admitted that in these lectures Dr. OLIVER has set an example which is worthy of all commendation. Selecting as his subject Recent Studies on the Tissue-Lymph Circulation he has presented in the first lecture the results of recent work by himself and by others concerning the physiological conditions of the tissue-lymph circulation, while in the second he has given numerous valuable indications of the deductions which may be drawn and of the influence these researches will probably have upon the medicine of the future. It will be seen that he considers they throw a new light upon the explanation of gouty conditions and towards the end of this lecture he has suggested several new methods of treatment which will, no doubt, soon be submitted to rigorous investigation by those who have abundant opportunities of verifying or disproving the claims made on their behalf.

To some extent the first lecture is an extension of the author's Croonian lectures delivered in 1896. After dealing with the effect of the ingestion of food on the tissue-lymph circulation he considers in detail the alterations in the blood during digestion, noting changes in the corpuscles, in the hæmoglobin, and in the specific gravity. His observations on the variations of muscular contractility after food show that they always follow a certain order, from which he is able to draw valuable conclusions in relation to the effects of exercise and sleep. When dealing with the influence of sodium and potassium chlorides upon the arterial pressure and the outflow of tissue lymph reference is made in passing to the important rôle assigned by the late Sir WILLIAM ROBERTS to sodium chloride in the pathogeny of gout and to his valuable suggestion that gouty subjects might derive benefit from the substitution of potassium chloride for sodium chloride. Dr. OLIVER, pursuing a totally different line of inquiry, reaches the same conclusion —that sodium chloride favours, while potassium chloride inhibits, a gouty tendency. The section dealing with the influence of muscle extractives upon tissue-lymph circulation and upon the blood pressure is that which demands the most careful study, since this affords the key to the treatment which is formulated in the second lecture. This section really forms the major premiss of the syllogism and accordingly its verification is of the utmost importance. The conclusions merit quotation: "Such bodies as uric acid, creatin, creatinin, xanthin, glycogen, and sodium chloride perform an important function in nutrition, for during digestion they act as distributers of lymph to all the tissues, an office which the nutrient constituents themselves (proteids, fats, and carbohydrates) are incapable of discharging."

In the second lecture Dr. OLIVER deals with the influence of exercise, fatigue, rest, sleep, respiration of gases, internal secretion, temperature, and gravitation before

[1] THE LANCET, April 30th (p. 1175), and May 7th (p. 1262), 1904

reaching the consideration of the practical deductions and the new remedies suggested by this inquiry. It is interesting to note that he believes that the removal of lymph from the tissues is largely the result of absorption rather than of transmission along the lymphatics and the view of the relative part played by the short circuit by absorption and the longer circuit by the lymphatics is supported by details of a simple experiment which may easily be performed. The explanation of the efficacy of massage in relieving the sense of fatigue and the happy reference to the treatment of the weary heroes of the Odyssey, with the pithy remark that "human instinct, without knowing 'why,' practised what is now taught by physiological inquiry," will serve to show the readiness with which Dr. OLIVER annexes from ancient practice and modern teaching facts in support of his contention. Similar readiness is displayed with regard to the changes which occur during sleep. Consideration of the influence of the respiration of various gases upon the blood pressure and lymph circulation naturally leads to brief reference to the effect of sulphuretted hydrogen, notably in connexion with Harrogate water and an explanation of the recognised value of the compound sulphur lozenge introduced by Sir ALFRED GARROD. Extremely curious, and we believe quite new, is the observation, with its explanation, of the tendency of those working in sewers to become "rheumatic or quasi-gouty" in comparatively early life. Although Dr. OLIVER refers this tendency to an unknown emanation in the sewer atmosphere acting as a lymph factor it would be interesting to know by what means, apart from the observations he describes, he has eliminated the possible influence of other factors, such as alcohol or an excess of meat. In spite of the value of the researches connected with internal secretion practitioners will find the most absorbing interest in the practical deductions, and here it is important to bear in mind the distinction that is drawn between the arterial pressure and the "working physiological blood pressure" of the capillaries. The relative work is admirably expressed in very few words: "The arteries and veins are but conduits for the passage of blood to and from the seat of the metabolic traffic—the capillaries." From this point most of the lecture is concerned with gout in its protean forms, "a term which has been regarded by some as a convenient label for a sort of rubbish heap of nondescript ailments." The adoption of the views here enunciated would serve to produce some order out of chaos and certainly Dr. OLIVER supports his argument by practical suggestions for a dietary which is admitted to be beneficial and for which he supplies a rational explanation. The remedies enumerated include Witte's peptone, ammonium hippurate, lichenin, glycogen, and lævulose, and they are introduced as the outcome of the author's experiments, their claim to consideration being mainly based upon physiological observations. Dr. OLIVER, so far from speaking of them in glowing terms which might inspire distrust, admits that though he has employed them only in a tentative way the results encourage him to prescribe them. Introduced with such modest reservation but with an apparently sound physiological reason, these remedies seem to merit extended trial. The provisional conclusions with which the second lecture closes deserve thoughtful consideration. It is of the utmost practical importance to gain a "clearer insight how to control disarrangements of nutrition and metabolism," but many further experiments by other workers are needed before it can be admitted that Dr. OLIVER is right in thinking that this can be attained solely or mainly "by studying the conditions which increase or decrease lymph effusion." Meanwhile he is to be congratulated on the interest which his lectures must evoke and upon the skill with which he has demonstrated the intimate connexion between physiology and medicine.

Annotations.

"Ne quid nimis."

THE AMENDMENT OF THE LUNACY ACTS.

Sir John Batty Tuke availed himself of the vote for the maintenance of the Lunacy Commission for England and Wales in order to lay before the House of Commons the extreme inadequacy of this Commission as at present constituted and to ask for some inquiry into the subject. He pointed out that there are only three medical commissioners to supervise the treatment of 114,000 lunatics, so that, while in Scotland there is one such commissioner to every 3822, in England the proportion is one to 38,000, and he maintained that a Commission so undermanned must necessarily work in a wooden fashion, unsympathetically and without elasticity. The numerical inadequacy of which he complained was, he said, growing worse and worse, for there had been no enlargement of the Commission since its establishment in 1845, while the number of the insane had increased nearly five-fold and while a great change had come over the conception of insanity. The insane person was no longer regarded as a pyschological curiosity but as a pathological subject. The nation was doing its best to stamp out tuberculosis and cancer but it was not doing its best in respect to a disease which attacked three persons out of every 1000 and which, if not arrested, consigned its victims to a living death. Sir John Tuke was well supported by other medical Members of the House, and especially by Sir Michael Foster, who declared that in no branch of science had there been greater progress during the last generation than in the knowledge of the brain and the central nervous system. That wonderful web of delicate fibre and cells was being gradually unravelled and day by day a command was being obtained over the brain which was unknown when the Lunacy Acts were introduced. Though medical science had reduced other diseases, lunacy, if anything, was on the increase, and the main fault was in the present state of the lunacy laws which, if they did not hinder, certainly did not facilitate the application of science to the disease, especially in its early stages, in which it was most likely to be amenable to treatment. He proceeded to show the necessity for changes in the present methods of notification and certification and strongly supported Sir John Tuke's demand for a complete inquiry. Dr. R. Farquharson, who followed, dwelt upon the superiority of the Scotch method of managing what are often described as "border cases" and declared that there ought to be special hospitals or special wards and special pathological institutions. In fact, there was a general recognition by the medical Members of the House that the time had come when insanity should be regarded as a disease like other diseases and that it should be investigated and treated by ordinary clinical methods.

The Attorney-General, in rising to maintain on the part of the Government that everything is for the best in this best of all possible worlds, "was not satisfied" that there was any proof of increase of insanity. He has, however, presented a Bill, which was read for the first time on Wednesday afternoon, having for its object the amendment of the Lunacy Acts. His somewhat unscientific attitude in his speech makes of his practical action a pleasant surprise.

INFANTILE MORTALITY.

IN his report on the infantile mortality in the borough of Croydon, a report which covers a period of several years up to the end of 1903, Dr. H. M. Richards, the medical officer of health, has amassed a large amount of information which is likely to prove of considerable service to the borough council in arriving at a satisfactory method of abating the unnecessarily high rate of mortality among infants in its district. The borough of Croydon is a very large one and covers nearly 10,000 acres of ground. It has an annual birth-rate which approaches 4000 and the annual number of deaths which occur among infants under one year of age very nearly reaches 400. To be exact the infantile mortality for the year 1903 was 133 per 1000 children born. This figure, though unnecessarily high, compares favourably with the mortality of many other districts. It has been Dr. Richards's object to investigate so far as possible the causes of this high mortality and to suggest such remedies as may prove of real practical value, not only for his own district but for others similarly situated. His investigations have, among other results, led Dr. Richards to the conclusion that perhaps the most essential element in the prevention of deaths among infants is the exercise of intelligent supervision on the part of the mothers. The greater the degree of poverty the greater the need for intelligence to compensate for the concomitant disabilities associated with defective food-supply and bad hygienic conditions. The education of the mother and of the rising generation of girls in the elements of nursery hygiene and in the principles of infant feeding must constitute, therefore, one of the most important factors in any scheme which has as its objective the reduction of infantile mortality. The preponderating proportion of deaths which occur among artificially fed infants clearly indicates the need for the encouragement of the natural method of feeding. Municipal cleanliness, especially in respect of the efficient scavenging and watering of the streets, is insisted upon by Dr. Richards as an important element in the maintenance of domestic cleanliness and as a corollary in the prevention of diarrhœal and other infectious diseases. Experiments carried out by the Croydon sanitary committee on the lines of more thorough scavenging and watering of a particular section of the East Ward were followed by improvement in the mortality among infants which was, to say the least, suggestive that such hygienic precautions were important elements in the prophylaxis of diarrhœal and other infantile complaints. To meet the difficulty in regard to substitute feeding in those cases in which breast feeding is unobtainable Dr. Richards considers the advantages of a municipal milk depôt for the purpose of providing at a reduced cost for the poor a supply of properly modified milk. We gather that the medical officer of Croydon, although by no means enthusiastic with regard to such a scheme, is on the whole in favour of the establishment of a depôt for his borough, although he admits that owing to the very large area it would have to serve many difficulties and complications will necessarily arise which may not have been in operation in other districts where this method has been successfully carried out. Be the advantages, however, of a milk depôt what they may, we cannot too strongly endorse Dr. Richards's view that even when a mother has been provided with the proper food for her infant only a short way has been gone towards rearing a healthy child. By far the most important results may be expected from educational methods and by the insistence of domestic cleanliness. No doubt a very great deal could be done by systematic visits from health visitors, by addresses and lectures, and by practical instruction to the elder girls in elementary schools, but there still remains the difficulty, at least so far as London is concerned, that domestic cleanliness is to some extent a question of expense.

MEDICAL DEFENCE.

THE scheme of medical defence as prepared by the Medical Defence Committee of the British Medical Association was submitted to criticism at a recent meeting of the South-West (Wandsworth) division, an account of which will found at p. 1452 of our present issue; and the result cannot be regarded as wholly satisfactory. Very properly the discussion was at first limited to the advisability of medical defence being undertaken by the British Medical Association, any reference to a scheme being ruled out of order until an expression of opinion had been given on the broad question. It was evident at a very early stage that the position of the Medical Defence Union formed the chief obstacle. While it was suggested that the new development of the British Medical Association would benefit by the experience and coöperation of the Medical Defence Union and of the London and Counties Medical Protection Society it was clear that the former body possessed strong views against the expediency of any such amalgamation. These views were ably stated by Dr. A. G. Bateman and have already been discussed in these columns.[1] At the meeting at Wandsworth the matter was regarded mainly as influencing members of the medical profession who were already members of the Association and by 16 votes against seven it was ultimately decided that the meeting considered it desirable that the British Medical Association should take up the question of medical defence. Before the air was thus cleared it was stated on behalf of the Medical Defence Union that there was no intention of "winding up" and there really seems no valid reason why it should not continue its good work for the general practitioner who objects to being obliged to join the ranks of the British Medical Association before he can receive the benefits of protection by further payment. This side was more fully discussed when the scheme was before the meeting, but progress was blocked by an impossible motion to the effect "that no scheme submitted by the Association could carry on medical defence safely and efficiently until it has been prepared by a committee including the medical defence societies in their official capacity and after duly consulting its members through the divisions." Sir Victor Horsley ably urged the adoption of the scheme and while indicating that the existing societies should be invited to merge themselves in the Association he admitted that if the societies were not willing to come in he considered it a very open question whether a third body should be instituted. Much of the discussion of the scheme was far from helpful. Objection was raised to the submission of a scheme "to pass, to tinker up, or to decline." What could it matter where it originated so long as the meeting was asked to approve, to amend, or to reject it? From Dr. Bateman's inquiries members of the Association who are members of the Medical Defence Union are not in favour of amalgamation and it is therefore to be presumed that this body will continue, even should the British Medical Association succeed in gaining over the London and Counties Medical Protection Society. The moral support of the strong financial position of the British Medical Association was freely urged as an advantage of the

[1] THE LANCET, April 16th, 1904, p. 1085.

scheme and this must necessarily become an inducement to attract into the fold those who are not already attached to the British Medical Association. After very prolonged discussion upon many subjects, from medical defence to the funds and expenditure of the Association and to its influence on medical men "in the antipodes, in India, in Canada, all over the world, all over the empire," the motion was put to the meeting and lost, and then it was agreed to adopt the principle of the scheme and to refer it to the committee of the division. When it is remembered that this lukewarm approval of the scheme was all that could be gained by Sir Victor Horsley's spirited advocacy it seems probable that the idea of medical defence being undertaken by the British Medical Association is not likely to be accepted so long as the Medical Defence Union holds aloof.

TRANSVERSE WHITE LINES ON THE NAILS DUE TO ARSENICAL POISONING.

THAT transverse white lines on the nails are a sign of a passed illness is an old observation, but it was only after the epidemic of arsenical poisoning in Manchester and the north of England due to drinking contaminated beer that this condition was found to be one of the results of arsenical poisoning. *A priori* the marked action of arsenic on the epidermis would lead an observer to expect some effect on the nails which are only modified epidermis. Dr. E. S. Reynolds, to whom the merit is due of first pointing out this effect as well as of discovering the cause of the epidemic, found in some cases "a transverse white ridge across the nails; proximal to this the nail is normal but distal to it the nail is whiter, cracked, thin, and towards the tip almost papery and much flattened. In some cases there has been a series of parallel transverse ridges almost suggesting a series of week-end drinking bouts."[1] In the *American Journal of the Medical Sciences* for April Dr. C. J. Aldrich has described under the title of "Leuconychia Striata Arsenicalis Transversus" three cases of white lines on the nails due to arsenical poisoning. In one case a woman was suffering from severe arsenical neuritis, the result of taking with suicidal intent a teaspoonful of a rat poison. On the nails were white crescentic streaks about one sixteenth of an inch wide and presenting a curve identical with that of the lunula. On the toe-nails the streaks were less distinct. The body was covered with branny desquamation, much of the hair had fallen, and the palms and the soles showed some keratosis. From the position of the lines on the nails the time when the arsenic was taken could be estimated. In the second case a man sought advice for neuritis. He gave a history of "stomach difficulty" with hæmatemesis three months previously. Soon his legs became weak and he could get about only with the help of two sticks. He was ataxic and had foot-drop, the knee-jerks were absent, and there was some loss of sensibility. On the nails were transverse lines similar to those described above. The patient on being told that his symptoms probably were due to poisoning at first demurred but then admitted that he had been poisoned with arsenic, refusing to give any explanation. In the third case a man, aged 29 years, addicted to alcohol and tobacco gave a history of abdominal pain, severe vomiting, and cramps in the arms and the legs three months before he came under observation. Six weeks later he began to lose power in the limbs and the arms became numb. He walked with sticks and had an ataxic gait. The knee-jerks were absent and the lower limbs and the fingers were slightly anæsthetic. On the nails were crescentic white streaks which so much resembled those in the previous case that Dr. Aldrich diagnosed arsenical poisoning. Some time later the patient confessed to having taken an arsenical rat poison. The lines corresponded in position to the time when the arsenic was taken. The toe-nails showed faint markings but there was no keratosis of the palms or the soles. It is to be noted that in Dr. Aldrich's cases there was not a "ridge" on the nails as described by Dr. Reynolds but only a streak. Perhaps the cause of difference was the more chronic poisoning in the latter's cases. These white lines are thus not a mere scientific curiosity but a sign which may prove of great use in the diagnosis of arsenical poisoning—a condition often liable to give rise to difficulties. It may be remembered that arsenical herpes, discovered by Mr. J. Hutchinson many years ago, remained long only a clinical curiosity the very existence of which was doubted by many authorities. But it was the presence of herpes in several cases in the epidemic referred to that gave Dr. Reynolds the clue to the cause.

[1] THE LANCET, Jan. 19th, 1901, p. 166.

SMITH *v.* PARE.

THE action of Smith *v.* Pare, recently tried before Mr. Justice Lawrance and a special jury, has ended disastrously for the plaintiff. In THE LANCET of March 14th, 1903, p. 745, comment was made upon a newspaper article, a circular letter, and a leaflet which advocated and advertised an alleged new treatment for the cure of cancer by means of high-frequency electricity. The leaflet and the letter associated the "cure" directly with Mr. E. A. Cloete Smith. Our annotation on the subject dealt with the fallacious hopes which such publications were likely to encourage in cancer patients rather than with the propriety of the manner in which publicity was given to Mr. Cloete Smith's methods, but the ethical question was subsequently considered by the General Medical Council and we believe that the circulars had by that time been discontinued. Apparently, however, they had had their effect, which in the case of the wife of Mr. Pare, the defendant in the action referred to, was one unfortunate both for the patient and for the plaintiff. The evidence given at the trial confirms our observations with regard to the probable efficacy of the treatment proposed, and the facts made public show how ill judged was the manner in which it was thrust into notice. Mr. Cloete Smith's friends were no doubt over zealous on his behalf and it must now be a matter of regret to him that they were so. Mr. Pare's wife was operated on by Sir Victor Horsley four or five years ago for an internal growth of such a nature that recurrence was not impossible. In September, 1902, she was suffering from pneumonia and blood poisoning and Mr. H. Huxley, who was consulted, recommended open-air treatment, in consequence of which she was subsequently sent to St. Leonards. She was there in February and April, during which period Mr. Huxley did not attend her, but in March the husband showed to him a document which referred to the treatment administered by Mr. Cloete Smith and informed him that Mrs. Pare's relatives were extremely anxious for a trial to be made of it. The same circular was shown to Sir Victor Horsley and there appears to be no room for doubt as to the nature of the opinions which Mr. Pare received. It was that high-frequency electricity would not be likely to do his wife harm but could do her no good. No mention was made of the use of the x rays and there was no consultation with Mr. Cloete Smith whom Mr. Huxley, forming an unfavourable opinion of the ethical aspect of the circular, refused point-blank to meet. Mr. Pare eventually decided to avail himself of the services of Mr. Cloete Smith and the patient underwent the treatment prescribed by him at St. Leonards. This, according to Mr. Cloete Smith himself, included at first the application of the high-frequency current twice a day for two hours and the application of the x rays at a distance of from 16 to 20 inches from the body. It was subsequently varied by the discontinuance of the high-frequency electricity

but the x rays were applied for some time afterwards, the application of the rays being in the hands of a gentleman with electrical experience but who was not a medical man. A nurse who was in charge of the case, but who had entirely disclaimed all knowledge and refused all responsibility with regard to electrical treatment, deposed that she received no instruction to watch the patient's skin, but that owing to the pain suffered by Mrs. Pare she communicated with Mr. Cloete Smith on the subject. It was in consequence of this that the high-frequency treatment was left off and the nurse upon her own responsibility stopped the application of the x rays after having observed that burning had resulted from their use. Mr. Cloete Smith appears to have ordered their continuance but again the nurse stopped them and informed him that his patient was being tortured. On this occasion he seems to have examined Mrs. Pare and to have said that he had no idea that the burning had been so serious. It was at a date some time later than this that Mr. Pare realised the condition in which his wife was as the result of the use of the x rays, which had caused extensive dermatitis and burning, and the course he took was to seek Mr. Cloete Smith and to assault him, also refusing payment of his fees. The action tried was accordingly brought by Mr. Cloete Smith as plaintiff to recover 100 guineas for professional services and for damages for assault. Mr. Pare denied his liability as to the claim upon the ground that the treatment was useless, counter-claimed for damages for negligent treatment of his wife, and paid £2 into court in respect of the assault which he admitted. The judge after summing up left three questions to the jury, the first of which was as to whether Mr. Pare had consented to the use of the x rays. As to this there had been a conflict of evidence, Mr. Cloete Smith stating that he had mentioned and recommended them in discussing with the defendant the treatment which he proposed to apply, whereas Mr. Pare contradicted this and said that only the high-frequency treatment was mentioned, that he knew nothing of the x rays, and neither consented to them nor was asked to do so. The evidence of the nurse and of other witnesses tended to corroborate Mr. Pare and the jury found that he did not consent to the plaintiff's application of the x rays to his wife. The other questions were whether the treatment was proper treatment to apply, and whether the burning of Mrs. Pare's skin was caused by negligence and want of reasonable skill. Upon these points the jury had a considerable body of expert evidence before them as to the condition of Mrs. Pare before and after the treatment, and as to the impossibility of either the high-frequency current or the x rays affecting the internal organs of the body to which they were professed to be directed. With regard to these questions they found that the treatment was improper, negligent and unskilful. With respect to the assault there was no question for them save as to the damages, for it was not denied that it took place. They assessed the damages at £2, the amount paid into court. With regard to the counter-claim they found a verdict for the defendant for £100. As a consequence of these findings judgment was given for the defendant upon the claim, as the verdict in respect of the assault did not exceed the amount paid into court, and in respect of the counter-claim for £100. A stay of execution was refused. The line of treatment pursued with regard to Mrs. Pare scarcely requires comment. High-frequency electricity may have utility in diminishing pain in cases of malignant disease, but the application of electricity in the manner in which it was applied to Mrs. Pare is not likely to be adopted by medical men generally in respect of patients suffering as she was supposed by her relatives to be suffering when Mr. Cloete Smith's circular attracted their attention. Such ill advised interference caused her to undergo an extremely painful experience and it is to be hoped that the relatives now feel regret and realise that whenever it is vouchsafed to science to discover any treatment which will stay the progress of a dread disease the discovery is usually the outcome of slow and laborious work, developed gradually by anxious observations and by carefully recorded and compared experiments. Such a discovery, when its utility has been fairly established, is not advertised by pamphlet, circular, or newspaper article as the special monopoly of an individual, but becomes part of a medical science which it is the pride and ambition of a great and learned profession to extend and to promote for the common good of mankind. The practitioner in attendance on the patient, who is acquainted with the patient's needs, can advise as to where skill and knowledge should be sought more correctly than can the gossiping acquaintance or the irresponsible manufacturer of journalistic sensations.

OBSESSIONS AND MORBID IMPULSES.

INSANE obsessions and morbid impulses often play as important a part in human life as do the normal tendencies to thought and action which arise in the healthy and well-developed brain. And occasionally, by a curious irony of nature, it happens that a brain highly gifted in respect of intellectual and artistic endowments is the bearer of a blemish, a neurotic taint, which reveals itself occasionally or periodically in the appearance of absurd and irrational mental obsessions or of dangerous morbid impulses which to the individual are both repugnant and distressing. In the *Journal of Mental Science* for April Dr. James Shaw of Liverpool states that cases of obsession and morbid impulse are much more frequently met with in private than in asylum cases. "They may be physiological, as instanced by cases where catchwords or refrains haunt the mind for hours or days and then vanish" and, like hallucinations, they may be induced by drugs. On the other hand, they may be grave and indicative of some deep-seated, if not serious, taint or maldevelopment of the brain. In a leading article published in THE LANCET three years ago,[1] attention was drawn to the subject of the rhythmic psychoneuroses and morbid impulses which affect many persons on the borderland of mental health. The patient suffering from obsessions, says Dr. Shaw, is quite aware that they are entirely subjective and can describe his symptoms fairly well. He is capable of being reasoned, temporarily at least, out of his morbid fears, recognises any "criminal" tendency of the inciting thoughts, and is able, for a time at all events, to resist their promptings, and is quite alive to the absurdity—and in cases of mania blasphematoria or coprolalia to the obscenity—of his besetting words and thoughts. The besetting words and phrases, which in the sane are probably the equivalent of "voices" in the insane, and the obsessing images are commonly unpleasant and induce thoughts and reactions of distress, surprise, and disgust. Verbal obsessions are those in which words—mostly obscene or blasphemous—constitute the morbid besetment. They differ from coprolalia in that the words are not necessarily uttered by the patient. Such verbal obsessions may constitute the leading feature of a form of "obsessional" melancholia, as in two cases which Dr. Shaw has previously reported in THE LANCET.[2] "Both patients presented marked neuropathic heredity, and extreme religiousness. The words which were described by them as obscene and unutterable, and which were in fact never uttered, caused them intense mental anguish." Both patients had suffered from influenza prior to the mental illness and both presented motor agitation, especially of the arms. A more serious case in which morbid impulses to strike others and to injure himself were present was the following one of a married man,

[1] THE LANCET, April 20th, 1901, p. 1150.
[2] THE LANCET, August 9th, 1902, p. 359.

aged 32 years, whose brothers and sisters suffered from hypochondriacal delusions or mental depression. Hitherto he had resisted the morbid impulses referred to, being well aware that these promptings, so foreign to his better nature, were subjective and abnormal. "The inclination to strike sometimes arose without any provocation on seeing a weapon and a person near each other. ..... He was in constant dread of doing something violent. ..... When closely interrogated he said the 'internal voices' or 'loud thoughts' [which impelled him] were in his head." He also had the fixed belief that his soul was lost and he had crude hallucinations of sight and hearing. He saw "flashes of light" before his eyes and heard "creakings and clankings" in corners of rooms. He was full of emotion and would burst into tears when describing his experiences and he was afraid of having to go to an asylum. He was treated with rest, a change of surroundings, tonic cold baths, and medication with bromides and belladonna and aperient tonics. After steady improvement he went away and under the stress of an accident and unfavourable circumstances he relapsed and became worse, so that he had eventually to be placed in an asylum. Emotional, affective, or phobic obsessions may constitute, says Dr. Shaw, almost the whole disease in cases of obsessional aberration (rudimentary paranoia). Perhaps the most typical of these is the fear of open spaces (agoraphobia). An excessive and unreasoning fear of death or of disease makes many persons take extraordinary, though really futile, precautions. Women are especially the subjects of such obsessions of fear of death or of infection. In some cases of morbid impulse the will is occasionally powerless to prevent its execution and the question of responsibility has to be decided. Psychologically, says Dr. Shaw, a species of dissolution appears to take place in the highest cerebral centres (those of control of the thoughts and emotions) in cases of obsession and morbid impulse. Toxic conditions, mental exhaustion, and indulgence in alcohol may cause exacerbation of symptoms by inducing freer liberation of morbid impulses from the brain to the motor centres (impulsive acts). Treatment consists mainly in avoidance of cerebral excitement, rest, massage, hydrotherapy, aperients, cerebral sedatives with tonics, and judicious hypnotic suggestion.

THE UNIVERSITY OF WALES AND A MEDICAL DEGREE.

THE annual meeting of the court of the University of Wales was held on May 13th at Holyhead when Sir Isambard Owen, the senior Deputy Chancellor, who presided, referred to the fact that the University is not at present empowered to confer degrees in medicine and surgery although it prepares medical students for the preliminary examinations of other universities. Consequently students from Welsh schools were taking important places in other universities while the University of Wales lost the credit of their training. In order to obviate this Sir Isambard Owen suggested that a petition should be made for a supplemental charter which should enable the University to grant degrees in medicine, surgery, and obstetrics. H.R.H. the Prince of Wales, who is Chancellor of the University, has written through Sir Arthur Bigge signifying his approval of the proposal which was also advocated by Sir John Williams. The court accordingly decided to make application for a supplemental charter. We hope that the University of Wales will be successful in obtaining its request. Nowadays the possession of a medical degree is of great value to members of the medical profession. In the absence of a one-portal system, the institution of which seems now to have receded to an indefinite distance, it is puzzling for the public that some of the best equipped and ablest general practitioners in our body are not in possession of a doctor's degree. We welcome therefore the opportunities that are afforded by our new universities. But it must be pointed out that such a boon to local students as the possibility of obtaining an M.D. degree makes the plight of the London student additionally hard seeing that he can only obtain a doctorate from his university upon terms that are arduous as compared with those exacted by many other universities.

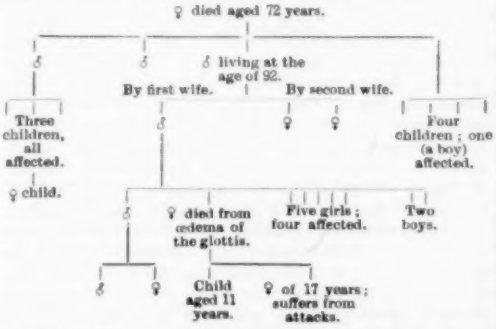
THE LATE MR. ADRIAN HOPE.

THE death of Mr. Adrian C. F. Hope, which took place at St. Thomas's Home on May 10th after an operation for appendicitis, has caused profound regret, especially amongst those members of the medical profession with whom he has been associated at the Hospital for Sick Children, Great Ormond-street, London, W.C., of which he was secretary. Mr. Hope was the eldest son of Colonel W. Hope, V.C., and at one time held an appointment at the Bank of England. He afterwards became private secretary to the Governor of Ceylon and in 1885 he was appointed secretary to the Hospital for Sick Children—a position for which he was eminently suited by reason of his sympathetic, tactful, and courteous nature. The welfare of the little patients for whom Great Ormond-street Hospital was founded was the one great object to which he devoted his life and the important position which that hospital has taken among children's hospitals is due in no small measure to the energy which he threw into his work. To his initiative was due the Coronation bazaar which was held in aid of the hospital in 1902 at the Royal Botanic Gardens and opened in July of that year by Her Majesty the Queen. Apart from the historic character of the bazaar it was remarkable for the brilliancy and distinction of its patrons. The visitors included most of the well-known leaders of society, many representatives of our colonies, and several Indian princes. The sum realised on that occasion amounted to £19,000. Though the work of the Hospital for Sick Children occupied almost the whole of his time Mr. Hope found opportunities for helping hospital work in other directions and was president of the Hospital Officers' Association.

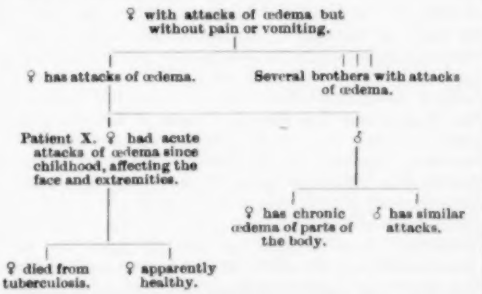
NEUROTIC ŒDEMA OF HEREDITARY ORIGIN.

ALTHOUGH the influence of heredity as a factor in the causation of certain forms of œdema, not of cardiac or renal orgin, was mentioned by Quincke in 1882, it was not until 1888, when Osler published the details of a case, that the subject attracted general notice. This was partly due to the position of Osler as a clinical investigator and partly to the exceptional circumstances which enabled him to obtain and to publish a full and accurate history of the patient's antecedents. Dinkelacher, a pupil of Quincke (1882), recorded the case of a matchmaker who had for years been affected with attacks of acute œdema and whose son, a child, aged one year, had suffered from the third month with the same affection, and in 1885 Valentin added the information that another son, then two years old, born subsequently to 1882, was also affected with similar attacks from the first week of life. The case reported by Osler is published by Dr. A. W. Fairbank of the Boston Hospital for Children in the *American Journal of the Medical Sciences* for May and he also adds details of other cases and personal observations. Through the fortuitous recollections of some of the members of the family, and especially the unimpaired memory of a great grandfather, aged 92 years, who had himself been affected for 74 years, a family history extending through five generations and involving 22 members was obtained of Osler's famous case. The characters of the affection in this family were the occurrence of local œdematous swelling in various parts of the body, the almost invariable association

of gastro-intestinal disturbance—colic, nausea, vomiting, and occasional diarrhœa, and the strongly marked hereditary disposition. The genealogical table is as follows:—



Ricochon (1895) reports an instance of acute œdema, accompanied by colic, vomiting, meteorism, malaise, and febrile disturbance, as follows:—


♀ with attacks of œdema but without pain or vomiting.
♀ has attacks of œdema.
Several brothers with attacks of œdema.
Patient X. ♀ had acute attacks of œdema since childhood, affecting the face and extremities.
♂
♀ has chronic œdema of parts of the body.
♂ has similar attacks.
♀ died from tuberculosis.
♀ apparently healthy.

This patient X.'s attacks could be brought on with great suddenness by mental emotion. The attacks appeared on an average once a fortnight. Her mother had similar attacks from childhood and died at the age of 63 years from dropsy. Dr. Fairbank also cites individual cases observed by Schlesinger (1893), Wardrop Griffith of Leeds (1902), and himself and states that these instances taken from records of medical literature leave no doubt as to the influence of heredity in these cases of acute recurrent neurotic œdema. In a more chronic type of the affection as cited by Milroy[1] the family history of the disease could be traced over six generations, comprising 97 individuals, of whom over 22 per cent. were affected. Of these the third generation comprised nine individuals all affected and all the children of one father. No more curiously interesting affection exists than this, says Dr. Fairbank. Death occurs in some, almost invariably from œdema glottidis, but others who are affected with it may live to a good old age. Of the ultimate neurotic nature of the affection, concludes Dr. Fairbank, there can be no serious doubt.

[1] New York Medical Journal, 1892.

THE DISTRIBUTION OF PLAGUE.

As regards the Cape Colony, the medical officer of health of the colony states that for the week ending April 23rd there were 2 cases of plague discovered at Port Elizabeth and that of 232 rats and 66 mice examined during the same period 82 rats and 7 mice were plague-infected. Plague-infected rodents were also found at East London, but of 343 rats examined in the Cape Town and Harbour Board area none was infected with plague. As regards the Mauritius, no case of plague was discovered for the week ending May 13th. As regards the Transvaal, a telegram from Lord Milner received at the Colonial Office on May 14th states that for the week ending May 14th the plague return was as follows: Total number of fresh cases reported since May 7th, 14—namely, 2 white persons and 12 coloured. Of the cases reported as plague 12 have been found not to be so, making the present total of suspected and proved cases 136—namely, 23 white persons and 113 coloured. Since May 7th the number of deaths reported is 2—namely, 1 white person and 1 coloured. At Hong-Kong for the week ending May 14th there were 28 cases of bubonic plague and 27 deaths from the disease.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

IN another column we publish a letter from Mr. Hugh C. Smith, the chairman of the executive committee of the above Fund, together with a communication from Sir John Aird who generously offers to increase his annual subscription by £105 as a help towards raising the income of the Fund from investments and other permanent sources to £50,000 per annum. Before the anonymous donor to whom Mr. Smith refers gave his magnificent donation the assured income of the Fund amounted to about £36,000 per annum, being £14,000 short of the sum to which it was hoped that the assured income would have amounted by the beginning of this year. He therefore offered to give a capital sum producing one-third of the shortage provided that by Dec. 31st of this year capital enough to produce the remaining two-thirds should have been subscribed or provided for. This probably means that a further sum of about £310,000 still remains to be collected. Sir John Aird's generous contribution should certainly stimulate other donors and we earnestly hope that despite the increasing calls which have to be met—namely, rates and taxes—the people of these islands will do their utmost to help the metropolitan hospitals which benefit not only the people of London but those of the United Kingdom or even, we may say, of the Empire at large.

THE SPOROZOA IN RELATION TO DISEASE IN MAN AND ANIMALS.

THE eighth and concluding lecture on the sporozoa was delivered by Professor E. A. Minchin at University College, London on May 9th.[1] It dealt with those sporozoa the affinities and place of which in classification are doubtful. Though difficult to classify, these forms are nevertheless of importance as disease-producing agencies. They include forms parasitic or chætopod worms (tubifex) and belong to the genus actinomyxon; the haplosporidia, which are sporozoa of small size and extreme simplicity of structure, which occur as parasites in rotifera; and the exosporidia, the lymphosporidia, and isolated species not placed in any group. The exosporidia include two remarkable forms—viz., amœbidium, a parasite which occurs on the gills and antennæ of crustaceans—and siedleckia, a somewhat similar organism which presents phenomena of multiplication and spore formation comparable to some of the lower algæ but which in other characteristics shows affinities with the gregarinæ—e.g., schizocystis. The lymphosporidia occur in the cœlomic fluid of crustacea and fresh-water fishes and a lymphosporidium was recently ascertained to be the cause of death of American lake trout which had been affected and destroyed by epidemics of an hitherto obscure disease. The few isolated species of sporozoa which remain unclassed include a gregarine-like parasite which is found in the mesenteries, lymphatic glands, and subcutaneous tissue of the flounder and which has a special interest because gregarinæ do not occur in the

[1] References to the previous lectures will be found in THE LANCET of March 12th (p. 736) and 26th (p. 889), April 2nd (p. 960) and 9th (p. 1009), and May 7th (p. 1296) and 14th (p. 1371), 1904.

tissues of the vertebrata, and an amœbiform sporozoon which has been described by Schweiakoff but not yet named and which, unlike all other sporozoa, is provided with a contractile vacuole. This amœbiform organism forms endospores which when freed from one another exhibit amœbiform movements and aggregate into masses or plasmodia like the malarial parasite. They occur in certain fishes but little is as yet known as to their pathogenic properties. Reviewing the general types of sporozoa and the affinities of the various classes towards one another Professor Minchin concludes that the sporozoa must be regarded as a class of protozoa which, though of parasitic habits and therefore considerably degenerated and modified in respect of bodily organs, are of dual origin—i.e., descended separately from proto-flagellate and proto-rhizopod ancestral forms, the common bond of parasitism with all that that entails, bringing about changes of structure which superficially produce resemblances uniting them to a class, whereas genetically they are of two different stocks. The flagellate ancestral stock gave origin to the telosporidia (gregarinæ, coccidia, and hæmosporidia), while from the rhizopod branch descended the neosporidial forms of which pleistophore is an intermediate stage and which include the myxosporidia, microsporidia, and sarcosporidia. The sporozoa are thus not a homogeneous group but have a dual origin from other protozoan forms.

THE ARTIFICIAL COLOURING OF EGGS.

IT is a curious fallacy that the brown-coloured egg is necessarily superior to the ordinary white egg, a belief which has led to the practice of artificially colouring the latter in imitation of the former. It is doubtful whether the colour of the shell bears any relationship to the nourishing quality of the egg. As those who rear poultry know, it is merely an indication of the strain of the laying bird. Still, a preference is very commonly shown for the brown or coffee-coloured egg; the colour is attractive and led by the eye the choice is very generally made in favour of what is regarded as the richer and superior article. The practice of deception is thus encouraged. The shell of the white egg is stained in the simplest possible way, perhaps by immersion in a decoction of coffee berries or by means of an aniline dye. This resource may satisfy the eye, but, after all, there is probably not the slightest difference from the nutritive point of view between the naturally brown-coloured egg and the white one. There is most probably, however, an important dietetic difference between two eggs, the yelk of one of which is a very pale yellow colour and that of the other a rich, almost reddish, colour. It is a notorious fact that the country-produced egg may usually be placed under the latter description, while the egg produced by the hen who is under an unhealthy and limited environment shows an anæmic colour, generally a very pale yellow. The eggs of wild birds—as, for example, the plover—show a yelk of a rich reddish colour. The substance which contributes colour to the yelk of the egg is iron, just as it is iron which gives colour to the blood, and there seems to be little doubt that the iron compound in the yelk of the egg is of a similar nature to that of the blood. It is easily assimilated and eggs are regarded as a suitable food for the anæmic person, as they present a concentrated and generally easily digested form of nutriment rich in iron. The iron compound of the egg has, in fact, been termed a "hæmatogen," because it is probable that from it the blood of the chick is derived. The amount of iron in the yelk of an egg would appear to increase with the intensity of its colour and there can be little doubt that the maximum is reached in the richly coloured yelk of the egg produced by a fowl existing in healthy surroundings, for then its processes of nutrition would be working under very favourable conditions. As an article of diet therefore the egg should be judged not by the colour of its shell but of the yelk which should be of a rich reddish rather than of a pale yellow colour.

MINERS' PHTHISIS.

FOR some time the Government has been considering the mortality among miners from miners' phthisis—a disease caused by the inhalation of dust into the lungs. All miners seem to be exposed to this disease but its incidence is chiefly upon rock-drill miners. An inquiry is on foot by Dr. J. S. Haldane, Mr. J. S. Martin (H.M. Inspector of Mines), and Mr. A. Thomas of Dolcoath and Mr. Martin had some time ago asked the coroner for Truro to send a circular to the medical men in that district, requesting them to report any deaths from miners' phthisis to the coroner in order that post-mortem examinations might be made and inquests held so that as much light should be thrown on the matter as possible. On May 9th an inquest was held by Mr. E. L. Carlyon on the body of a man named William Cornish, a miner of Gwennap, who had died from phthisis. Mr. P. H. Edwards, the medical attendant of the deceased, gave evidence to the effect that Cornish had worked in mines in Cornwall and in South Africa. He was aged 60 years at the time of his death. Dr. Arthur Waters of Oxford, who had made the post-mortem examination, testified as to the state of the lungs of the deceased. They were largely consolidated from inhalation of dust and smoke. Dr. Haldane said that the actual cause of death was tuberculosis but that infection by the tubercle bacillus had been facilitated by the injury sustained by the lungs from dust. During the last three years 19 men from the parish of Gwennap had died from pulmonary disease and 18 of these from phthisis, while all had worked as rock drillers in the Transvaal. Their average age was 36 years. Of miners who had not worked rock drills 37 had died at an average age of 56 years and 25 of them had died from pulmonary disease. Dr. Haldane recommended the use of water jets to keep down the dust. In the case of rock drilling the use of water jets should be made compulsory by law and the same legislation should obtain for blasting. Mr. Pengelly, a juror and a miner, supported the use of jets but another juror, also a miner, objected to water jets. The jury returned a verdict that the deceased had died from pulmonary phthisis apparently caused by the inhalation of dust and added the following riders:—

1. That in view of the large number of miners who have recently died in this district from the effects of dust inhaled during rock drilling and other underground work, particularly in the Transvaal, and also in Cornwall, we consider that special legislation for the purpose of dealing with this very grave source of danger to health is urgently called for.
2. That copies of this resolution be submitted to His Majesty's Secretaries of State for the Home Department and for Colonial Affairs.

It is much to be hoped that the results of this inquest will inspire the Government to take action at once upon the matter. It may be that the use of water in a deep mine may lead to various difficulties as regards hygiene from other points of view than the respiratory one. But water rock drills are being used in the Simplon tunnel works and the particular drill—namely, that on the Brandt system—was exhibited at the conversazione of the Royal Society on the evening of May 13th, to which we refer more at length in another column. Pulmonary disease is so fatal to miners that where it is possible the water drill, which certainly does prevent dust, should undoubtedly be used.

THE REGISTRATION OF NURSES.

THE question of the registration of nurses is temporarily shelved but it is one which must inevitably again call for notice seeing that it provides a bone of contention between two influential sections of the nursing world. We hold no brief for either party, as will be evident from a perusal of the annotations dealing with this topic which have

already appeared in our columns,[1] but we may appropriately summarise the evidence for and against the proposed alteration of the status of nurses in order that our readers may understand what is really in dispute. This object will be materially furthered by reference to two articles which have appeared in the *Nineteenth Century*, one in February last and one in the current (May) number. In the former Lady Helen Munro-Ferguson states the case for registration with some fulness, while the latter gives Miss Eva C. E Lückes, the matron of the London Hospital, an opportunity of presenting her views on the subject. At present, according to Lady Helen, the nursing profession "has no governing body, no standard of training, no corporate existence. Every hospital, whatever its size and standing, is a self-constituted training school." Everything depends on the matron who "may so legislate that her nurses will leave the hospital having seen but one department of work and remain, therefore, practically untrained in every other important direction." Under the present system there is no authority which is in a position to safeguard the interests of the public, and, on the other hand, nurses have "no fear of professional shipwreck to deter them from unprofessional conduct." The key of the position which Miss Lückes takes up is the opinion that the qualities of a good nurse are not capable of registration and this view is frequently reiterated in the article to which we allude. "Technical knowledge is only one, and that the least important, side of a nurse's qualifications," she says, and proceeds: "Where nursing is concerned the results of examination are specially misleading. A nurse may possess plenty of technical knowledge of her work and have no faculty for displaying this knowledge at examinations. ..... One of the most insidious injuries that registration would inflict upon future nurses would be to make the right women believe that if they could not pass such examination as may be required by a central board they must get their living in some other way." On one point we are entirely in sympathy with Miss Lückes, and that is in condemnation of the "pseudo-scientific young person who is more concerned with showing off her 'little knowledge' to the doctor and more interested in the 'case' than in the patient," but we do not quite see why registration should "tend to multiply this type indefinitely."

THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

THE annual dinner of the members of the Pharmaceutical Society of Great Britain and their friends was held in the Whitehall Rooms of the Hôtel Métropole on May 17th, when the President of the society, Mr. S. R. Atkins, occupied the chair. He was supported on his right by Sir William S. Church, the President of the Royal College of Physicians of London, and on his left by Mr. J. Tweedy, the President of the Royal College of Surgeons of England. As might have been expected the speakers during the evening referred chiefly to the subjects uppermost in pharmacists' minds just now—namely, the new Poisons Bill shortly to be introduced into Parliament and the Pharmacy Bill. The former proposes to relax to some extent the present conditions under which poisons are sold and to extend the power of selling certain of them to unqualified persons. Pharmacists regard this Bill, not without some excellent reasons, as practically a proposal to introduce free trade in poisons. The Pharmacy Bill is a measure seeking to deal with companies practising as pharmacists. There can be no doubt that pharmacists are being seriously and unfairly handicapped by the pushful action of the unqualified trader. This is a serious menace to the dignity and interests of a hard-working profession, besides which it is obviously desirable that the public should be protected against unqualified trading. Strong and persistent concerted action is what is required, urging upon the Government the importance and need of the reforms just indicated. Mr. Thomas Lough, M.P., in replying to the toast of "The Houses of Parliament," expressed the belief that the Pharmacy Bill had been well received and he was strongly in favour of legislation being introduced with the view of checking the sale of poisons by other than duly qualified persons and all druggists' shops should, he contended, be managed by duly qualified men. Sir M. M. Bhownaggree, M.P., promised his support. In proposing the toast of "The Medical Profession," the President hoped that the help always willingly accorded by the Pharmaceutical Society in the preparation of the Pharmacopœia would receive official recognition. Sir William Church, replying to this toast, congratulated the pharmaceutical profession on the high standard of purity which had been obtained in regard to drugs and he hoped that he might count on securing the help of pharmacists towards introducing a system of control for the standardisation of sera. At present there was a great difficulty in obtaining serum preparations made to a uniform standard. Mr. Tweedy congratulated pharmacists on the improved status of their calling and said that the timely aid which the pharmacist always afforded, in a quite unostentatious way, in emergency cases was a tribute to their humanity and skill. Dr. J. Wilson Swan, F.R.S., then proposed the toast of "The Pharmaceutical Society," the President replying. The proceedings closed with the toast of "The Guests." Amongst those present were several Members of Parliament and the scientific societies were represented by their respective presidents.

MEDICAL SOCIETY OF LONDON: ANNUAL ORATION AND CONVERSAZIONE.

THE annual conversazione of this society was held on May 16th and there was a large gathering of Fellows. After a reception by the President, Dr. F. de Havilland Hall, the annual oration was delivered by Sir Isambard Owen who chose as his subject the Future of Medical Education in London. It is printed *in extenso* at p. 1399 of this number of THE LANCET. A vote of thanks was proposed by Dr. J. Kingston Fowler, seconded by Mr. A. Pearce Gould, and carried with acclamation. Afterwards music was provided by the string band of the 2nd Life Guards.

THE annual report and statement of accounts for the year 1903 of the Medical Defence Union have just been issued. The announcement is also made that the annual general meeting of the members of the union will be held on Thursday next, May 26th, at 5 P.M., at the Medical Society's rooms, 11, Chandos-street, Cavendish-square, London, W. Referring to the action taken by the union in regard to the scheme of the British Medical Association for medical defence the report of the council of the Medical Defence Union states that many letters have been received from members of the union in all parts of the United Kingdom in which cordial expressions of support and agreement with the action taken by the union are to be found.

THE net value of Sir Henry Thompson's estate has been sworn at £223,748, this being one of the largest fortunes left in recent times by a member of our profession. A certain, and not small, portion is represented by a legacy. Sir Henry Thompson desires in his will that his trustees shall send his portrait by Sir John E. Millais to the trustees

[1] THE LANCET, April 2nd, p. 946; 9th, p. 1009; and 23rd, 1904, p. 1140.

of the National Gallery and that his autobiography shall not be published until ten years after his death.

Mr. Howard Marsh, professor of surgery in the University of Cambridge and consulting surgeon to St. Bartholomew's Hospital, will deliver the Hunterian lecture at St. George's Hospital on Wednesday, May 25th, at 8.30 P.M., his subjects being (*a*) Intermittent Hydrops of the Joints and (*b*) the Influence of Growth on Deformities. All members of the medical profession are invited to attend.

A DINNER will be given to Mr. Chamberlain in recognition of his eminent services to preventive and tropical medicine at the Criterion, Piccadilly Circus, London, W., on Thursday, June 30th, at 7.30 P.M., by the Royal Institute of Public Health. Applications for tickets (one guinea) should be made to Mr. James Cantlie, M.B. (honorary secretary), at 19, Bloomsbury-square, W.C.

THE official summary of births and deaths and their causes in the principal towns of England and Wales during the year 1903 has just been issued, 76 great towns and 103 smaller towns being now included in the official purview of Somerset House.

THE death occurred on Monday last, May 16th, of Professor Etienne Marey, the inventor of the sphygmograph and famous for his physiological work in illustration of the cardiac and respiratory movements.

H.R.H. Princess Christian of Schleswig Holstein will be present on Saturday, May 28th, at the annual meeting of Guy's Hospital Ladies' Association, of which she is president.

WE publish below an appreciation by Professor William Stirling of the zeal, energy, and great scientific acumen of the late Professor Wilhelm His.

Mr. David Charles Lloyd Owen has been appointed an Esquire of the Order of the Hospital of St. John of Jerusalem in England.

PROFESSOR WILHELM HIS,

K. S. GEHEIMER RATH; PROFESSOR OF ANATOMY IN THE UNIVERSITY OF LEIPSIC.

BY WILLIAM STIRLING, M.D., D.SC. EDIN., LL.D.,
PROFESSOR OF PHYSIOLOGY AND HISTOLOGY AT, AND DEAN OF THE MEDICAL FACULTY OF, THE VICTORIA UNIVERSITY OF MANCHESTER.

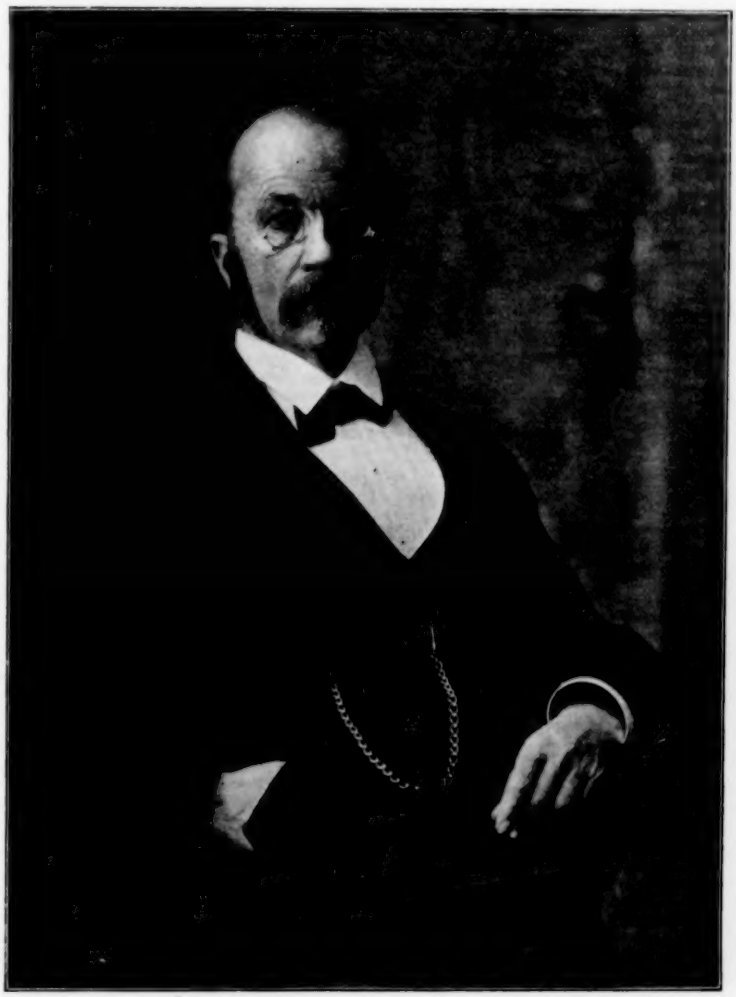
(*Being a tribute of regard and esteem for the man, his work, and his beneficent influence.*)

FULL of years and honours, after a life of devotion to scientific pursuits, Wilhelm His, after a long period of suffering nobly borne, died at Leipsic on May 1st. Born on July 9th, 1831, in Basle, His pursued his medical studies there in 1849 for one session; he then studied in Berne, under Theile and Valentin, and then (1850–52) in Berlin, where he was a pupil of Johannes Müller and also of Robert Remak. His was much impressed with a lecture on development given by Remak embodying the results of his own observations. He afterwards studied at Würzburg (1853–54) where Virchow was then professor. Virchow, it may be remembered, was forced to leave Berlin and Würzburg was only too pleased to have him from 1849 to 1856 when repentant Berlin recalled Virchow. For three sessions His studied under Virchow and in 1856 he published his "Beiträge zur normalen und pathologischen Histologie der Cornea" (six plates), which was dedicated to Virchow. After studying at Prague, Vienna, and Paris His in 1856 became a *privat docent* at Basle under Meissner and succeeded him in 1857 as professor of anatomy and physiology when Meissner was called to Göttingen. Indeed, it was only a year or two ago since Meissner retired from Göttingen to be succeeded by Verworn. His remained in Basle until 1872, when largely through the influence of Carl Ludwig he was called to Leipsic to fill the chair of anatomy. On the retirement of Ernest Heinrich Weber his chair was divided, Ludwig becoming professor of physiology and His professor of anatomy. Thenceforth Ludwig and His worked together and they soon made Leipsic the centre from which emanated great works in their respective subjects and to which were attracted numerous pupils, both from the Fatherland and Europe, and, indeed, from all over the world, who were anxious to study under such distinguished masters.

For over thirty years the names Leipsic and His have been indissolubly linked together. Early in the "seventies" W. Braune was associated with His as professor of topographical anatomy. The death of Braune in 1892 was a sore blow to His and an irreparable loss to anatomy. The scientific contributions of His exceed 100 in number. Amongst the earliest were his papers on the cornea and its corpuscles; then followed his studies on adenoid tissue and the lymphatic glands, including those of Peyer and other glands associated with the lymphatic system. He was the first to pencil away the leucocytes and thus reveal the adenoid structure. His studies on the lymphatic system extended to the lymphatics present in membranes and to those of the central nervous system, indeed, the perivascular spaces of His still bear his name. Some of these researches were done jointly with his friend, Th. Billroth, who at that time was professor of surgery in Zürich. Let anyone refer to the beautiful plates on the structure of the lymphatic and thymus glands in the early numbers (1861–62) of the *Zeitschrift für Wissenschaftliche Zoologie* and he will find pictures unsurpassed by any at the present time.

A little known but valuable document is that "Ueber die Entdeckung des Lymphsystems," in memoriam Ernesti Gottlobi Bosei, published in 1874 at Leipsic by His. It gives one of the best and most accurate accounts of this historically interesting question, every statement being accompanied by a reference to the original source. On purely descriptive anatomy—apart from his series of models—his great work, jointly with L. Rütimeyer, is the "Crania Helvetica" (1864). The year 1865 marks a new departure and one that led him to his great life-work on development and embryology—viz., "Ueber den Bau des Säugethiereierstocks." This led to "Die Häute und Höhlen des Körpers" being studied from an embryological point of view.

His held in high estimation Robert Remak of Berlin. His was specially impressed with Remak's view that the true glands had a mixed origin, that while their vascular tissue arose from the mesoblast their epithelial cells were derived from the other two membranes. It was not this, however, which led His to his "life work." He reached that by a roundabout channel and we may take it as beginning in 1865 with his work on the ovary, and this work he pursued with assiduous labour and marvellous and enduring success for nearly 40 years. In "Die Häute und Höhlen des Körpers," a small quarto of 34 pages published as an "Akademisches Programm" in Basle in 1865, he refers to the fact that since the time of Bichat—nearly half a century—no comprehensive monograph had appeared on these important topics. His, however, treats the subject from the point of view of the development of the several organs and the origin of the tissues from the layers of the embryo, and he refers again to Remak's theory of the origin of the central nervous system from the epiblast and the peripheral nerves from the middle layer of the embryo. Before great progress could be made and before the origin of the nervous system could be fairly worked out, a microtome had to be invented and the technique much improved, and this His did. His was the first to use a microtome which enabled him to prepare serial sections in 1866. His views on the archiblast and parablast were strongly opposed. After relinquishing part of his parablastic theory and modifying it in 1881, he in 1900 published "Lecithoblast und Angioblast der Wirbelthiere," wherein, with most other observers, His recognised the separate origin of the connective substance and the "Anlage" of the vessels. The former he derived from the mesoblast; the latter arises from the extra-embryonal and peripheral mesoderm and grows from this later into the embryo. His had a surer ground when he studied the part played by mechanical processes



PROFESSOR WILHELM HIS.

in determining the foldings and curvatures that occur in developing organs and he may be regarded as one of the chief advocates for what is now known as "the mechanics of development." His's semi-popular work published in 1874 and thrown in the form of letters dedicated to his friend Ludwig—"Unsere Körperform, und das physiologische Problem ihrer Entstehung"—set forth this view. He returned to the subject in 1894 (in the *Archiv für Anatomie und Physiologie*) in a classical paper on the Mechanical Fundamental Processes concerned in the Moulding of Form. Beginning with the foldings and anfractuosities known to the geologist, His, by means of elastic plates, modeller's wax, strips of paper, leather, and various other materials, shows what an important part unequal growths on the one hand and pressure on the other exert in moulding the form and flexures of the central nervous system.

When Müller's *Archiv* ceased and when du Bois Reymond founded its continuation as *Archiv für Anatomie und Physiologie* His took over the editorship of the anatomical part and nearly in every number from 1877, the year of its foundation, down to 1901 we find one or more papers from his pen and pencil dealing with development in all its aspects, from the unfertilised egg to the successive changes that occur in the embryonic layers from their appearance onwards, the development of special organs like the lungs, thymus, and thyroid, but above all the early stages of the nervous system. More especially important is his work on the human embryo. His large folio, "Anatomie menschlicher Embryonen" (Parts I., II., and III., 1880–85), is a monument of exact draughtsmanship and a mine of accurate detail of the early stages of the human embryo. His studied the early stages of development in the chick and in bony and other fishes. In his great work on the human embryo for the first time we have an accurate picture in word, portrait, sections, and models of the early stages of development. He meant to fill in the picture by giving the development of the individual organs but was unable to accomplish all his desires. Undoubtedly the most important are his numerous researches on the nervous system, some published in the *Archiv* and others in the Transactions of the Saxon Academy of Science. In his latest papers he studies the morphology of the total nervous system and suggests new views derived from a study of comparative development and deals with the inter-relations of the cell elements themselves. In the *Archiv* his numerous papers on the nervous system are specially important. In 1889 he set forth his researches on the "neuroblasts" and their origin in the embryonic cord. About 1886 he established a view which he had long held that the axis cylinder is a process of a nerve cell and he found that the axis cylinder of the anterior spinal nerve roots grew out from the cord while those of the posterior or ventral root grew into the cord secondarily from the spinal ganglia. It is easy to see how these results bear upon the more modern researches of Golgi, Cajal, and others.

His was one of the chief founders of the Anatomische Gesellschaft and was the chief mover in connexion with the scheme for unifying anatomical nomenclature. The commission was formed in 1889 and His was able to report in 1895. In 1876–78, along with Braune, he founded the *Archiv für Anatomie und Entwicklungsgeschichte* and was its editor. He became editor of the anatomical part of the *Archiv für Anatomie und Physiologie*. The magnificent and extensive institute for anatomy was built under his direction and formed the pattern of many others. From the "seventies" onwards Leipsic was the Mecca of young investigators desirous of prosecuting researches under Ludwig and His. He was always desirous of visualising his work and hundreds of models of embryos in all stages were accurately made to scale. The importance of the His-Steger models, which represent accurately the position, size, and relations of the viscera, is such that they are to be found in every medical school. New methods had to be devised to get such accurate results. His fully describes the "situs viscerum" in the *Archiv* of 1878. His reconstructions preceded the method devised by Born.

When the new Johanniskirche was being built in 1894 it was desired to find the bones of Johann Sebastian Bach in order to re-inter them in a suitable fashion. It was known that Bach, aged 65 years, was buried in a shallow grave and after much search His found an oaken coffin containing a skull that closely corresponded to the portraits of Bach. He "reconstructed" the head and made it almost a certainty that the bones were actually those of the great composer. He published a special monograph thereon in the Transactions of the Saxon Academy of Sciences.

When we survey the immense amount of original work which His accomplished we can well say that "prodigious" was his energy and his application and untiring was his zeal. When we remember that all this was accomplished along with the active performance of the duties of a professor of anatomy in a great school of medicine, we can only wonder how it was done. His was a clear and explicit lecturer, a draughtsman of the highest ability, and marvellously beautiful were the pictures which he built up before his audience in the lecture theatre. All the drawings—and they were legion—for his various papers and monographs were drawn by his own hand either directly or by means of his embryograph. Early he saw the value of photography to the anatomist and histologist and a large photographic department formed part of the outfit of his laboratory.

Many are the anatomists who studied under him. In our own country we may mention Symington and Gemmill and across the pond Mall, Clark, Flint, and MacCallum. Endowed with a charming personality and a manner at once suave and inviting His attracted round him groups of young investigators eager to work under him. He was always ready to help the beginner and to guide him by his wise counsels. For several years and on many occasions it was the writer's privilege to see much of His and to learn a great deal from him. Perhaps this may prove an excuse for trying to write something on a subject not my own in memory of one who "im Wort und Bild" has left an indelible impress on embryology and morphology and by his researches broadened their foundation, extended their domain, and by so doing has left behind a record of imperishable work and many, many friends and pupils to mourn their loss.

THE

GERMICIDAL EFFECT OF SEPTIC TANKS AND BACTERIAL FILTERS, AND THE BACTERIOLOGY OF SEA-WATER AND OF SHELL-FISH.

SECOND NOTICE.[1]

IN our first notice of Dr. A. C. Houston's report to the Royal Commission on Sewage Disposal we dealt with the bacteriology of the upper and lower Thames, of the London sludge and effluent, and of the waters of the Barrow Deep. In this notice we shall touch briefly upon the remaining subjects treated of in the report. A detailed and exhaustive notice would make too much claim upon our space and therefore an indication of the contents of the work and of the conclusions deduced from the experiments will probably be most acceptable to our readers.

The Inoculation of Sewage with the Bacillus Pyocyaneus and the Subsequent Isolation of that Organism from the Sewage Effluent of Certain Biological Processes.

It is one of the commonest fallacies of the present day to assume that in the septic tank and bacterial filter a panacea has been found for all the evils with which sewage is associated. If, therefore, it is alleged, all our sewage can be subjected to one or other of such processes all will be well. This is a very common attitude on the part of those who seek to bring into operation the provisions of the Rivers Pollution Acts with respect to estuaries. But it is now many years—indeed, in the early days of the Exeter process—since experimental work raised the suspicion that this view was utopian and suggested that immunity from water-borne disease was not to be sought for in this direction. Those who still cling to these old beliefs will do well to refer to Dr. Houston's recent investigations in this direction. The cultures used in these experiments were those of the bacillus pyocyaneus and it is as well to point out that this organism has at times been found in sewage to which it has not been intentionally added. But this fact does not, as Dr. Houston observes, seriously invalidate the instructive results of his experiments. Dealing first with a continuous filter it was found that this organism when added to the sewage in enormous numbers appeared in the effluent within ten minutes of the starting of the experiments and that the virulent bacillus pyocyaneus was isolated from samples of the effluent obtained five hours afterwards. Dr. Houston

[1] The first notice was published in THE LANCET of May 7th, 1904 p. 1299.

is apparently afraid that erroneous conclusions may be drawn from these experiments and he therefore hastens to add the inferences which he draws—i.e., "that a continuous filter, although capable of yielding very good results chemically and, relatively speaking, good results bacteriologically, cannot be trusted in the case of the discharge of the effluent into a drinking water stream to remove the element of potential danger to health." We do not quite follow Dr. Houston as to the precise nature of the relatively good bacteriological results. Subsequent experiments with the same filter gave somewhat similar results and they showed that the organism in question could be detected in the filter up to the tenth day. When experiments were made with a septic tank and contact beds it was found that the bacillus pyocyaneus had no difficulty in passing through the septic tank and that this organism appeared in the septic-tank liquor within two and a half hours from the starting of the experiment and that it appeared in the effluent from the contact beds directly such effluent was drawn off. The fact of its speedy appearance in the effluent of the septic tank tends to show that, in this instance at least, the sewage did not remain in the tank for anything approaching the time which each particle is supposed to take in passing through, and it would seem likely that the organisms found in the effluent had "streamed" directly through the tank. This rapid appearance of organisms in the effluent from biological processes of sewage treatment is a disturbing feature of such methods, and although Dr. Houston tells us that in no instance was there any indication of multiplication it does not appear, so far as we are able to judge by the records, that there was any material reduction.

It would have been instructive had some experiments been carried out with regard to the reduction in organisms brought about by processes of chemical precipitation, and doubtless the Royal Commission is proposing to do some work in this direction. Moreover, it is desirable in the interest of streams used for drinking water or for shell-fish culture that the effect of sand filtration in the case of the effluents from biological processes should be tried or that some other method of bringing about a relatively sterile effluent should be discovered. Land treatment is not practicable in all places and what certain municipal authorities will wish to know from the Royal Commission is how, assuming suitable land to be not procurable, they may most economically set to work to produce an effluent in which the number of organisms present in the original sewage has been very materially reduced. The Royal Commission will forgive us if we suggest that in our opinion future work might be directed to this end. At present we seem to be some distance from the desired goal.

The Bacteriology of Unpolluted Sea Water.

The Royal Commission has performed a valuable service in promoting a series of experiments in connexion with this subject. Hitherto but little has been known as to whether or not organisms the presence of which have been held to condemn water and shell-fish were really natural inhabitants of both, and it is this absence of knowledge which has placed a powerful weapon in the hands of the opponents of what may be termed unscientific bacteriology. In so far, however, as surface samples are concerned Dr. Houston's experiments have greatly cleared the air. The samples of water examined in his laboratory were procured for him by the well-known bacteriologist, Dr. M. H. Gordon, from the west coast of Scotland during July, 1903, and it is a matter of very considerable interest to find that 34 out of the 35 samples of water examined yielded negative results *as to* bacilli coli, even when dealing with 100 cubic centimetres of the water. The remaining sample yielded a positive result with 10 cubic centimetres, but not with one cubic centimetre and Dr. Houston must have been very gratified to learn subsequently from Dr. Gordon that this sample was the only one which was collected at all near the shore.

As regards the bacillus enteritidis sporogenes none of the samples yielded a positive result with 10 cubic centimetres of the water. These experiments certainly go very far to show that neither bacilli coli nor bacilli enteritidis are to be found in any numbers at the surface of the ocean in places remote from land, and this notwithstanding the fact that, as Dr. J. W. H. Eyre has recently shown, birds and fishes, which were procured for him through Dr. H. T. Bulstrode's intervention from localities remote from land, were found to contain bacilli coli in abundance. But as Dr. Houston has pointed out in connexion with the bacteriology of the sea water in the Barrow Deep it is likely that organisms voided at or near the surface gradually sink to the bottom and, as he thinks, there undergo destruction. Clearly, however, to complete the research it is desirable that samples of water from near the sea bottom should be examined as also should samples of sand and mud taken from the bottom itself. This is the more important seeing that the shell-fish to which attention was mainly directed in the report before us have practically no alternative but to remain on the bottom. This criticism, however, in no way detracts from the excellent work done by Dr. Houston in the case of surface samples.

But having got these results Dr. Houston was evidently tempted to set up a standard in view, as he points out, of the range of difference between 100,000 bacilli coli per cubic centimetre in sewage and no bacillus coli-like microbes of any sort in 100 cubic centimetres of unpolluted sea water. But he adds that at the present time the attempt to lay down *absolute* standards is not justifiable. Before this can be done further study must be made. Moreover, the assumption that the bacillus coli is directly injurious "seems unwise, if not unwarrantable, in the present state of our knowledge," and he thinks that the only fair attitude to assume is that the bacillus coli is an *indirect* index of potential danger to health. In his view although it may be convenient to measure the degree of danger by the numerical abundance of bacilli coli nevertheless "neither the epidemiologist nor the chemist, nor even the bacteriologist can place a 'disease value' on any given pollution." Dr. Houston then devotes a considerable space to the discussion of these numerical standards and he sums up his conclusions in a series of propositions. Of these the one which has most bearing upon the subject of this article and upon administrative measures generally is the following: "That in all but obvious cases of contamination *degrees* of pollution need to be measured by the bacteriologist *who should interpret his results in the light of local observations and epidemiological considerations.*"

The Bacteriological Examination of Samples of Water and of Oysters obtained from the Helford and Penrhyn Rivers in Cornwall.

Dr. Houston selected these two estuaries for detailed examination because the Helford river is one of the purest estuaries to be found in England, whereas the waters of the Penrhyn river have ample opportunities at places of becoming specifically polluted. We cannot, we fear, follow Dr. Houston's work with regard to these two estuaries in detail. It is like all his work—eminently thorough in character and cautious in inferences. Dr. Bulstrode regarded the Helford river upon general topographical grounds as one of the very purest in the country and Dr. Houston from his own observations is practically in agreement with him upon this point. Dr. Houston also agrees that the Penrhyn river is an undesirable place in which to fatten oysters for the market. The first three samples of the Helford river which were taken at different parts of its course yielded no bacillus coli-like microbes in ten cubic centimetres of any of the samples and the bacillus enteritidis test also yielded negative results. These preliminary negative results were, as Dr. Houston remarks, in *complete agreement* with the *topographical features* of the Helford river. But samples taken later in the year were not equally satisfactory and it was found that in one experiment eight out of 25 samples—i.e., 32 per cent. —contained bacilli coli or bacillus coli-like microbes in one cubic centimetre of the water but not in 0·1 cubic centimetre. Whatever may be the meaning of these variations —whether, for instance, there may be some seasonal law at work or whether in this latter case there had been some recent pollution as from a yacht or from some bacillus coli bearing fish or animal other than man—they suggest repeated examinations of a water before a definite conclusion can be arrived at. They also indicate how great may be the injustice done, whether to the public or to the fishing industry, by hasty generalisations from those assuming that the bacteriology of water and of shell-fish has reached a final stage in which dogmatic statements can be made concerning an isolated sample of water or of shell-fish.

As regards the presence and number of bacilli coli in estuarial waters at different points we have already discussed the interesting conclusions arrived at by Dr. Houston as the result of his work in the Thames estuary, results which we agree with him are most instructive and hopeful. But with his customary love of fairness Dr. Houston furnishes on

p. 310 of his report a passage from a recent report made to the Massachusetts State board of health by Mr. H. W. Clark and Mr. Stephen Gage. This passage, which we reproduce, has about it a suggestion that bacilli coli may in their voyage down a river actually increase rather than decrease. Indeed, it is possible that bacilli coli obtained from places some distance from a sewer outfall may be merely the offspring of those which left the sewer, and this would appear to be the more likely in estuaries such as the Thames, where the sewage liberated on one tide oscillates up and down the river for days until parts of this "sewage zone," as it has been called, are gradually displaced seawards by the fresh water coming down from the upper valley of the Thames. If, as is obviously conceivable, bacilli coli undergo multiplication in presence of certain flora which may promote their reproduction, it is equally conceivable, although we are aware that certain experimental work points to the opposite conclusion, that the enteric fever organism also may again, under certain and unknown conditions, multiply. If this be so, do those organisms which multiply outside their natural habitat retain their pathogenicity? The Massachusetts passage is as follows: "In a table following it will be noticed that of the samples of clams taken at known distances from a sewer outlet, the greatest percentage giving positive tests were collected one-half to three-quarters of a mile from this outlet. The water samples collected from one-eighth of a mile to one and five-eighths miles from the sewer outlet gave a greater percentage of positive tests for B. coli. Those collected at a distance of one-fourth to one-half a mile also gave a greater percentage of positive tests for B. coli than did the samples collected nearer the outlet."

The Bacteriology of the Oyster.

Although within the last ten years or so a considerable amount of work has been done in the direction of ascertaining the flora of the oyster it cannot be said that such work has proceeded altogether upon scientific lines. The essential basis for any legitimate inferences has not been determined, and without such a basis all deductions from the discovery of bacillus coli, bacillus coli-like organisms, or bacillus enteritidis sporogenes are practically valueless. It has not hitherto been conclusively determined whether or not these organisms are to be found in oysters procured from localities altogether remote from pollution by sewage of human origin. Here, again, the Royal Commission through Dr. Houston has thrown very considerable light on the problem. Dr. Houston's researches render it very doubtful whether oysters procured from positions remote from land influences do as a matter of fact contain bacilli coli or bacillus coli-like organisms. His experiments thus far point to a negative conclusion as regards what may be termed uncontaminated deep-sea oysters, but there would appear to be some question whether the absence of these organisms may not be a question of season and not a constant feature. Having regard to the seasonal behaviour of certain diseases which are known to be associated with micro-organisms it is desirable to be cautious in drawing inferences and it will be interesting to see the result of Dr. Houston's further researches in this direction.

But for the moment the most instructive result of the investigations upon the bacteriology of the oyster is that bacilli coli or bacillus coli-like organisms were found in practically all the oysters which were examined and which had been procured from even the purest layings around the English littoral. The fact that these organisms have not been constantly found in the past is apparently to be accounted for by the varying distribution of the organisms in the body of the oyster. If, for instance, a pipette be taken and thrust more or less at random into the body of the oyster the amount of oyster substance and fluid withdrawn may be found devoid of either of the organisms in question. It would appear that in this manner are to be explained some of the negative results which were obtained in 1896 with oysters which were procured by Dr. Bulstrode from as near as possible to sewer outfalls but which were regarded by the bacteriologist to whom they were sent as wholesome molluscs. But Dr. Houston, appreciating the possible fallacy of this method, adopted the plan of examining the whole contents of the shells, and still further to guard against error he worked also with a *mixture* of ten oysters. His result shows, in his own words, "that B. coli or coli-like microbes can not only be practically always isolated from a *mixture* of ten oysters derived from layings which, judged from the topographical point of view, would be considered either above suspicion or at least reasonably secure from pollution, but also that such microbes can usually be isolated from each *individual*, or at all events from a great majority of the ten oysters experimentally tested."

Another very instructive point brought out by Dr. Houston's experiments is that the oysters almost invariably contain a much greater number of organisms per cubic centimetre of substance or liquor than is the case with the water collected above the oyster layings. Oysters examined from various sources differed materially as to the number which they contained of organisms which responded to all the tests to which bacilli coli isolated from the human intestines respond. For example, of oysters procured from West Mersea only 20 per cent. yielded what are called typical bacilli coli, a fact which shows how very misleading a test based solely upon typical bacilli coli is likely to prove. If the oysters which furnished the 20 per cent. had been by chance omitted from the oysters collected it is conceivable that an absolutely negative result might have been procured. But in the next ten oysters taken from the same source all ten contained typical bacilli coli. Again, in the case of ten oysters taken from the estuary of the Crouch *all* proved negative *qua* typical bacilli coli, whereas in the case of a second batch from the same source no fewer than nine of the ten oysters contained typical bacilli coli.

In summing up the results obtained with regard to what are certainly some of the layings most remote from the risks of pollution which exist in England Dr. Houston adds: "To suggest, therefore, that the oysters from these layings are impure in the sense that they are a source of danger to health would be a grave step to take. It would be equivalent to implying that secure conditions of oyster culture in England are practically unattainable." Dr. Houston clearly hesitates to accept what to some bacteriologists must be the logical outcome of his researches. He maintains, therefore, a somewhat agnostic attitude and while not affirming that the conclusions of the topographist are to be regarded as final he hesitates to make such a sweeping condemnation as would, we gather, be made by some bacteriologists—if they maintained a consistent attitude—upon the results obtained. Dr. Houston's attitude is with respect to this question of oysters somewhat similar to that which he adopted with regard to the water of the Thames in the neighbourhood of the intakes of the London drinking water. He is uncertain as to what value to attach to the testimony of *experience* and here he will find many sympathisers among those who approach the subject not exclusively from a bacteriological standpoint.

It will be said by some that the general outcome of Dr. Houston's elaborate research is disappointing, but from a purely scientific point of view, as also from an administrative standpoint, the results are, we think, eminently satisfactory. Dr. Houston has shown that the dimensions of this problem are such that at present dogmatic assertions cannot with justice to either side be reasonably made as the result of bacteriological examination alone, and in the interest of health it is surely an enormous advance to be delivered from a dogma for which there is no sufficient foundation We are quite sure that no bacteriologist would wish to jeopardise the public health or even an industry upon which many lives depend without being satisfied that the basis of his action was beyond dispute. We ourselves regard Dr. Houston's work as most valuable and if, as it were, it sets up a standard of excellence which other workers in the same field strive to attain a very material advance in the science of bacteriology will have been made. That there is still much to be learnt as regards the bacteriology of shellfish before dogmatic statements from the examination of one sample can be made is clear from the Massachusetts report already referred to. In this report it is stated that "the ability to demonstrate clearly the presence of a specific sewage organism such as B. coli is an invaluable aid in determining the question of purity or pollution." The fact that the presence of this bacillus *in large numbers* is an *aid* in doubtful cases may, we think, be conceded, even although the Massachusetts report adds that *in many samples from polluted sources bacillus coli has not been found in either shell, water, or intestine* (the italics are ours).

To sum up the situation it would, we think, be difficult to join issue with the recent report of the Royal Commission on Sewage Disposal when it says in Section 94: "Although we consider that the bacteriological examination either of sea water or shell-fish, even if carried out in a quantitative as well as a qualitative manner, cannot at present be recommended as a matter of routine for the purpose of distinguishing

unsafe foreshores, layings, ponds, &c., the result so far obtained shows great promise that by further inquiries a way will be discovered by which the elements of danger may be defined with much greater accuracy than is at present possible and it is in our opinion most important that researches in this direction should be continued."

We thoroughly agree with this recommendation which we hope will be followed by the Rivers Board, the creation of which the Commissioners advised in their third report, but we trust that the first act of the Rivers Board will be to close those layings, ponds, and pits which are *obviously* liable to pollution and the existence and surroundings of which have been well known since Dr. Bulstrode made his report to the Local Government Board so far back as 1896.

THE BRITISH MEDICAL ASSOCIATION AND MEDICAL DEFENCE.

A MEETING of the South-West (Wandsworth) division of the British Medical Association was held at the headquarters of the 4th V.B. East Surrey Regiment, St. John's-hill, Clapham Junction, London, S.W., on May 12th, to consider the scheme of medical defence as prepared by the medical defence committee of the Association. Dr. M. G. BIGGS presided and the number of members of the British Medical Association belonging to the division who attended the meeting and went to the poll upon the important question submitted to them was under 30.

Dr. BIGGS commenced the proceedings with a brief speech, recapitulating the situation and pointing out that there were two questions before them, which should be taken separately: (1) Is it desirable for the British Medical Association to take up medical defence? and (2) Is the scheme which has been prepared to that end by the medical defence committee of the Association a sound one? He decided to rule out of order the discussion of the scheme until the first question had been settled and voted upon and only divisional members would be allowed to vote.

Mr. G. WALKER (Wimbledon) then proposed that the British Medical Association should take up the scheme of medical defence, expressing himself strongly upon the advisability of gaining the experience and coöperation of the existing societies for medical defence.

Dr. S. VERDON ROE seconded the proposal.

Dr. A. G. BATEMAN, secretary of the Medical Defence Union, then addressed the meeting by the invitation of Dr. Biggs. He said:—

I am here by your courtesy, not to discuss the scheme, because I have nothing to do with that, but to explain the attitude which the Medical Defence Union has taken up in reference to this matter. The position has been made perfectly clear to our members and also, I think, to a great number of the profession who are members of the British Medical Association, because we issued a circular on March 3rd which was sent out to all our members and which was published in the *British Medical Journal* and commented upon in THE LANCET. The Medical Defence Union exists as a company limited by guarantee and could not in any circumstances merge or amalgamate itself into any other company or society but must exist as a separate entity, unless wound up voluntarily or compulsorily under the Companies Acts. The circular suggested "that to wind up and liquidate a financially sound and successful company, which has done for 19 years, and is steadily doing excellent and valuable work, not only for its members but also for the medical profession generally, would be a waste of the funds of the subscribers, involving as it would, large expenditure and a needless sacrifice of the best interests of its members." This point has been much criticised. We have been asked in what way our expenditure would be involved. This is the way. In a society like ours of a medico-legal character we are occasionally served with writs on behalf of our members. Supposing the writ came into the office to-day and we commenced to wind up to-morrow we should have to retain the funds in the hands of the liquidator to carry through the whole of the expenses in connexion with that case until its finish. Now, as I have personal experience it takes some time from the issue of a writ to the conclusion of the case. In this last fortnight we concluded a case the writ for which had been issued two years previously. The circular also said "that the union includes numerous practitioners who are not members of the British Medical Association who if the Medical Defence Union were wound up would either be cut off from defence and protection or would have to regain the protection now afforded them by becoming members of the British Medical Association and of its medical defence department at a cost of 35s. per annum," instead of 10s. per annum. I would ask you to remember in reference to our point of view that even in Wandsworth division there were 200 practitioners in this area of whom only six belong to the British Medical Association according to the last returns. The reason given for the new departure of the British Medical Association is that there should be one organisation only for medical defence, instead of, as at present, two or more. This, the council of the union desired in its circular to point out, would not necessarily follow even if the scheme were carried out, as it would not prevent members of the profession dissentient from the present scheme from again forming similar organisations outside the Association. The council has received hundreds of letters from members in all parts of the country, not only endorsing everything it had said and done, but stating that if the council did wind up the union they would form a new Medical Defence Union, and that rather than give up their membership of the union they would give up their membership of the British Medical Association. I am not here in antagonism to the British Medical Association. I have been a member of the British Medical Association for many years and have served upon many of its committees. All the members of our council are members of the British Medical Association and many of the members of the council are members both of the council and the committee of the British Medical Association. Therefore, the line which we take up is not antagonistic to the British Medical Association itself but is antagonistic to a scheme which if carried through would make a monopoly of medical defence. We think that healthy competition is better.

Sir VICTOR HORSLEY, speaking also by invitation, said:—

Dr. Bateman has referred to the circular of the Medical Defence Union, my connexion with which union in past years I look back upon with the utmost pleasure and gratification. This circular dealt with a scheme and many of Dr. Bateman's arguments relate to the details of a scheme and not to the whole question from a general point of view. I should like to have the opportunity of dealing with the circular of the Medical Defence Union because in many respects I consider it to be misleading. Dr. Bateman said that the council of the Medical Defence Union was opposed to monopoly and in a letter to the *British Medical Journal* I saw a reference to American trusts and unions—the Medical Defence Union is a union—(Dr. BATEMAN: But not a monopoly)—the British Medical Association, we hope, is also a union of men who help each other. The meaning of the word association is a congeries of *socii* or allies, so that to fight against a proposal to extend the principle of mutual defence throughout the whole profession is, I think, a political mistake on the part of any one body carrying that work out. We mean by a monopoly, using the word in a bad sense, that a particular body of men are going to try to gather into their grasp trade in one direction and that they alone shall make a profit out of it. The use of the word monopoly in this connexion is wholly unjustifiable. What has been proposed for the British Medical Association is a union of as many members of the profession as we can possibly get together to help each other. If that be a monopoly then I am proud to be a monopolist. The council of the Medical Defence Union seems to think that the medical practitioner of this country is made for the union. When I was president of the union it was my feeling that the union was made for the practitioner and that is my attitude now. The council of the Medical Defence Union, in speaking of this matter in its general sense in its circular, said that it felt that it ought to keep the union in existence. Why? Surely it could be only in the interests of the general practitioner throughout the country; it could not be in anybody else's interests. Well, then, let us approach this subject not from the point of view of the preservation of existing machinery. Let us discuss the way in which we can extend the principles of medical defence to the largest number of the profession. I submit that it is a mistake to keep a small organisation going. There is no question of the helpfulness of competition. But surely we are not competing against each other as medical men, to defend ourselves against each other: we want to defend ourselves against the public. We can only do that by having a combination, the very combination to which, as I said before, exception was taken in the columns of the *British Medical Journal* and taken by a man who is a combinationist. The only other question that comes under consideration on the general matter, it seems to me, is this: Have the defence societies considered the subject from the point of view of the requirements of the practitioners of the country at large? I do not think that they have yet. If there is better machinery in the market surely it is best for us to put the old machinery on the scrap heap and to take the new machinery. I am looking at it from a cold-blooded point of view no doubt, but these questions are to be regarded from the cold-blooded point of view and not from that of sentiment. When we were getting the British Medical Association reorganised we were told on all hands that we were ruining the Association. What is the result? We have this year a larger balance of profit in the Association than heretofore. As regards finance, it is quite obvious that if you have got an organisation with an annual turn-over of over £40,000 that that is, *per se*, a much stronger thing than an organisation with a turn-over of £3000 or £4000. Surely that must be obvious to everyone. I would therefore suggest to you that if you want to get machinery of the greatest power the wisest thing for you to do is to take the British Medical Association and to make that your machine and to organise it for the purpose of medical defence.

After some remarks from Dr. ALLAN, Dr. BIGGS invited Dr. Hugh Woods, secretary of the London and Counties Medical Protection Society, Limited, to address the meeting; but Dr. WOODS said that it had been decided that his association would do nothing until the scheme was before them. Personally, he was in favour of the British Medical Association taking on medical defence.

Dr. G. A. HERON said:—

I have no wish to repeat Sir Victor Horsley's words but so far as this matter goes he and I think practically alike. Too much emphasis has been laid on the fact that if the British Medical Association takes up medical defence the Medical Defence Union will not give it assistance. Dr. Bateman then said that it would take years to train the British Medical Association for the work of medical defence. (Dr. BATEMAN: Quite right). Well, I venture to suggest that medical defence is very well understood even outside the ranks of the Medical Defence Union. There is another society, for instance, in existence which has not done badly in this matter, and we are quite sure that from among the branches of the British Medical Association we can get an ample supply of men perfectly competent to carry on medical defence on behalf of the British Medical Association quite as well as it is carried on now by the Medical Defence Union or by the London and Counties Medical Protection Society which although they have done such good work are really a source of weakness to each

other. The most important argument in favour of medical defence being taken up by the British Medical Association is that we should have all our interests, so far as we can have it so, under one roof governed by men who are of ourselves, to whom we have access. So far as the difficulty in winding up the Medical Defence Union is concerned, if the business of the union was submitted to half a dozen competent business men they would wind it up in as many months in spite of all the difficulties which have been suggested. If we medical men, with all our experience in past years of the evil which has been done to our profession by want of union, cannot come together on this subject of medical defence and show that we mean to stand by one another the sooner we give up medical defence altogether the better.

Dr. MAJOR GREENWOOD said :—

We want to be sure that in getting a medical defence society we get one which will do the best for the profession. It is possible the scheme of the British Medical Association might be better than other schemes, but we must have a reasonable argument for this before we give up societies to which we have hitherto been in the habit of trusting. Some remarks made by Sir Victor Horsley with regard to monopoly were not quite fair. Would it be right, as a matter of principle, to say that no medical practitioner is to have medical defence unless he joins the British Medical Association? That was Dr. Bateman's point, I think. It seems to me that in such a situation you have a type of monopoly which we as a nation have always condemned. With regard to one of the defence societies to which I belong we from the time of our existence have accepted registered dentists and they have been allowed to join us. We have a fair number of them among our members and they could not be accepted by the British Medical Association. Therefore, of course, if we were to wind up and to join in a scheme we must at once, without any right or reason as far as dentists are concerned, say to the dentists you must go and found a medical defence association for yourselves. Again, Sir Victor Horsley spoke of a turn-over of £40 000 a year compared with one of £3000 or £4000 a year. But taking the Medical Defence Union and the London and Counties Medical Protection Society together their annual turn-over would be more than £4000 devoted to medical defence only. The question which has to be ascertained is how much of the aggregate income coming to the British Medical Association could be devoted to medical defence. The wealth of the British Medical Association to my mind does not come into the matter at present. On the mere principle the question as to what would be better for the profession if we could have it I agree with the motion that medical defence should be conducted by the British Medical Association.

Dr. E. A. MILLER said :—

Sir Victor Horsley referred to destroying the worst machinery, but if we do form a defence branch of the British Medical Association it is very much a question whether we shall destroy the already existing machinery. Dr. Heron has referred to the existence of two defence societies and has indicated that any advantage to one is a disadvantage to the other. His argument, brought forward in support of our forming a third association, is a most powerful argument against doing so.

After a few words from Dr. Richards pointing out that the British Medical Association had been only recently remodelled and that further development in its work had better be delayed Dr. BIGGS put the motion, when the voting was : in favour, 16 ; against, 7.

Dr. BIGGS having declared the motion carried called upon Sir Victor Horsley to give his opinion upon the scheme of the British Medical Association for medical defence.

Sir VICTOR HORSLEY said :—

As a former President of the Medical Defence Union I feel very keenly on this matter. Paragraph No. 8 in the circular of the council of the Medical Defence Union says: "That the proposed new department will only defend its members, that is to say, limiting its work to individual defence, whereas the Medical Defence Union has for many years done good work in collective defence, such as the prosecution of unqualified practitioners and the like." Sir, in that passage there is not a single word of what the British Medical Association has done, and is doing, by way of collective defence of the members of the profession. The British Medical Association has spent hundreds and thousands of pounds in this very work and it is doing so now. When Dr. Greenwood referred to the turn-over of the Association as not carrying on the face of the balance-sheet a statement as to how much money is spent on defence he was stating an obvious truism but he entirely misunderstood my argument. I was only quoting the turn-over of the Association to show that a body with a large financial income and expenditure was a stronger body than one with a small income and expenditure. In the scheme which the committee of the Association has put forward are two great general principles. The first is that the previous action of the Association would be carried out. This is no new subject; it has been before the Association ten years. At Birmingham years ago we carried, in the teeth of the reactionary party of the Association, resolutions to alter the memorandum of association in order to carry on the individual defence of members and in order that we might extend our powers of collective defence. These resolutions have never been put into force and they are now inadequate in form on account of the reform of the constitution. The scheme which you are asked to support by the committee provides as a first item that the Association shall go forward with these proposals to alter the memorandum and to make it possible for us to defend members of the Association, not merely collectively on a larger scale and with greater freedom of expenditure, but individually. Sir, the second point is one which seems to have been entirely overlooked in the recent correspondence in the *British Medical Journal* and it was overlooked by Dr. Miller. He said if it is wrong to have two societies, how much worse will it be to have three? In taking that line he was doing the committee of the Association unwittingly a very grave injustice. The second item of the scheme is that the existing societies should be invited to merge themselves in the Association and the committee had every reason to hope that the sense of patriotism which the profession at large enjoyed would induce the existing societies to do that. Nothing, I think, has caused the members of the medical defence committee of the British Medical Association more pain than to find that that paragraph of their scheme has been overlooked. If the two societies were not willing to come in I feel myself it it is a very open question whether we ought to institute a third. As Dr. Bateman himself has said, the same men who are now carrying out the work of medical defence would be the men to carry it out for the British Medical Association. Is it not ridiculous that we should here be talking about the Medical Defence Union, the London and Counties Medical Protection Society, the British Medical Association, and so on, when it is identically the same men whom it is proposed shall do the same work. The medical defence committee of the British Medical Association simply say to you as members of the Association—if you look into this matter you will find that the majority of the members of these two protection societies are members of the Association; they are our members, actuated by the same principles and desires; we simply ask them to come in and do the work together instead of apart. The proposal has not been discussed in the spirit in which it was offered. No amount of natural sentiment towards a society which has done well in the past certainly—and of course it should go on if nothing better is offered—should stand in the way of this scheme. But the *personnel* of it is brought into a larger mechanism and asked to do a larger work with a larger machinery and larger powers than heretofore. That ought to have been welcomed in the interests of the medical profession. There remains one more point with which I will trouble you, because it is a point to which indirectly reference was made when the question of raising the annual subscription to the Association is discussed. Years ago I endeavoured to get the subscription raised to 30*s.* I did so because I knew from a study of the balance-sheet that if we had a subscription of 30*s.* the Association would have taken up the defence of all its members. It is true that the present working of defence societies shows an expenditure coming out at nearly 10*s.* per head, but I am sure in my own mind that this is an unnecessary expenditure and if in the British Medical Association we had available profits amounting to 5*s.* per head that would be enough to do the work. I think 10*s.* is an outside sum, but it would make the members of existing societies no worse off than before. If they joined our scheme their work, their interests, would be watched over by the same men for the same money. The only difference would be that instead of being separate mechanisms each with their own funds, and each with their own office expenditure, medical defence would be brought under one head and one office, and behind this would be the financial stability of the Association. There is a passage in the circular of the Medical Defence Union on that point which I object to. It says: "As its funds are to be kept apart from the Association funds and the officers appointed by it are not to be officers of the Association." There you have a skilful rendering of the details of the scheme which though in the main true is yet not true. Is it to be supposed, if the scheme was carried out, that people would not understand when a man went into court that he had got his whole Association behind his back? The scheme provides that where extra expenditure is called upon the fees of the Association would be drawn upon and how anyone can say that in such circumstances the defence scheme and organisation would not be an organisation of the Association I cannot understand. There are members of the Association who feel that the Association ought to carry out a defence on the present 25*s.* a year subscription. Well, I have gone into that question and I do not think it is financially quite possible. I think it is very nearly possible, and I think that if under our new organisation we find out some new source of income apart from advertisements, and if we can find some philanthropist in the Association who will simply give the Association—and I have asked one or two but I am sorry to say without success—a donation of £10,000, we could start a defence scheme to-morrow on the present subscription. But until we have got that gift to our funds we cannot safely propose it on the present subscription. In those circumstances there was nothing for it but to bring in the existing societies on the 10*s.* basis until the Association was financially strong enough. A very few years' saving will give us the £10,000 that is wanted to secure our financial stability in starting defence on the present subscription. I suggest that we should get in the existing societies, unite them in one organisation, and for the time being charge members who join that scheme 10*s.*, and when the Association is rich enough to do it, do it on the annual subscription of the Association.

Dr. E. R. FOTHERGILL said :—

I move that no scheme submitted by the British Medical Association could carry on medical defence safely and efficiently until it has been prepared by a committee including the medical defence societies in their official capacity and after duly consulting its members through the divisions. I think the fault of the whole scheme is that this committee prepared the defence scheme without duly consulting anybody and I think a few of the members here to-day have been against the Association taking up defence because of that fact. The defence societies have been ignored. And we as individuals have the same cause of complaint. We have had a scheme sent to us to pass, to tinker up, or to decline. I think it is the general opinion that the central office should initiate no business at all until they have consulted the various members in their various divisions. There has been no attempt in the preparation of this scheme to consult those who have had experience. It is a one-man scheme, with all deference to the one man who is very capable.

Sir VICTOR HORSLEY said :—

The President of the Medical Defence Union was chosen as a member of the committee because of his office; the treasurer of the London and Counties Medical Protection Society was chosen because he was treasurer of that society. Finally, both secretaries were officially invited to come and help the committee.

Dr. BATEMAN said :—

Dr. Hugh Woods and myself were simply asked to attend to give evidence. We had nothing to do with the scheme.

Dr. WOODS said :—

My society was fully represented on that committee; we do not complain in any way.

Dr. MILLER said:—

I have pleasure in seconding Dr. Fothergill's motion. We are anticipating if we say let the British Medical Association take up medical defence and then take in the Medical Defence Union and the Medical Protection Society. Their consent to come in should be got first.

A discussion here arose as to the accounts of the British Medical Association, the subject being considered germane to the motion because it was probable that if the Association had more money they would not find it necessary to raise the subscription.

Dr. SHAW and Mr. J. S. WHITAKER having spoken,

Dr. BATEMAN continued in answer to Sir Victor Horsley. He said:—

I am very sorry to be in opposition to Sir Victor Horsley because I have worked with him as secretary of the Medical Defence Union and on various committees and I think I may safely say this is the first time I have ever been in opposition. The scheme is practically dead but not being yet dead one must say something about it. We have 5800 members of the union and over 1600 are not members of the British Medical Association. If we had all our members present at the meeting who are members of the British Medical Association and the 1600 who are not members of the Association turned up as well, as they have a perfect right to do, it would be absolutely impossible for us to get the necessary three-quarters majority in favour of winding up, even if we wished it. And we have felt all along, and still feel, that to desert those 1600 members and also those of the union who dissent from this scheme would be a scandalous injustice to those men. It was felt necessary at once to save the time of the British Medical Association by issuing that circular. That is why the council did it. We could not call our members together but we sent a copy to every member. And with the exception of one member we have not had a dissentient from it. Therefore I think we may take it that the view of the council was also the view of the members. Those who think that the union is divided on this point I would invite to read the hundreds of letters, if they have time, in which the action of the council has been confirmed. We intend to bring this up at our annual meeting on May 26th. Any members of the union who object to it could propose a vote of want of confidence but I do not think such a vote of want of confidence would be passed.

Dr. HERON said:—

I think it is an unfortunate thing that anyone should have so misstated the fact as to say that this scheme submitted to you is the scheme of one man. It is a scheme drawn up by two members of the British Medical Association at the request of the committee appointed for the purpose of considering medical defence and these two members did their best to form a scheme which they thought might suit the circumstances of the Association as they now exist, not as they may exist in the future. That is quite another question. Because two members of the council of the Medical Defence Union who were members of the committee withdrew their consent from this scheme and published a minority scheme it is assumed that the Medical Defence Union is justified in opposing the scheme. I think this is a most deplorable and unfair attitude. The London and Counties Medical Protection Society came to the conclusion at its annual meeting that its best plan was to wait until it was officially communicated with by the British Medical Association and then to give the scheme submitted to it by the British Medical Association its best and, if possible, its favourable consideration. Surely, Sir, that is a much more charitable attitude. The reason why six members of the representative committee should be elected by the council of the British Medical Association is that the Association is going to be asked to be responsible for a considerable sum of money under this scheme and therefore it is not unreasonable. With regard to the appointment of the executive it was thought a reasonable thing that the men who would have control of the medical defence department in the British Medical Association should elect the officers with whom they would have to work and as the members of the medical defence committee would all be more or less experts in medical defence surely they would be the best judges of the sort of men they wanted to fill the various offices under them. Those who have gone into the accounts must be aware that we have got in round numbers available £6000; that is the whole surplus which we have just now. The membership of the British Medical Association is 19,000, scattered all over the British Empire—in the Antipodes, in India, in Canada. A man in the most outlandish part of the British Empire who is a member of our Association has as much right to be defended as a man in London. It is proposed that money should come out of the 25s. subscription to meet the expenses of the enormous scheme of medical defence that would be necessary. I do not see that it is possible; I do not believe you will get half a dozen sane men to undertake the management of such an affair as this with only £6000 behind them. The expenses would be enormous and I doubt whether you could work at all if you included the whole 19,000 members of the British Medical Association. You say limit it to the number of men in the United Kingdom—14,000. It costs 9s. per head to run the business of the London and Counties Medical Protection Society and 9s. to run the business of the Medical Defence Union. I differ from Sir Victor Horsley in this matter. I do not believe that, at first at all events, you will be able to bring the expenses of the British Medical Association in the matter of medical defence to a less figure than that which is now required by the two societies, which is practically the same, 9s. per head. I do not believe that you will be able to run it at less money at first though you will by-and-by. I do not see how we are to know with certainty what medical defence is going to cost the Association at the outset. So I contend that you must start with a subscription of 10s. or some other sum to set the machinery of ordinary medical defence going within the British Medical Association. Those who choose to take medical defence on those terms can get it; those who do not choose can stay out. A good deal has been said to-day about the man who is not a member of the British Medical Association. I venture to say that I have no sympathy with him; he ought to be; and if he does not choose to come into a scheme of this sort let him stay out. Also, what we have heard about a rump being formed of the existing members of the Association for defence if the British Medical Association takes this matter up. We have heard a great deal about there going to be another medical defence union. When the British Medical Association takes up medical defence and goes seriously for it the end of that rump will be no less disastrous than that of the other rump which we have read about in the seventeenth century. I hope this meeting will endorse not the details of the scheme perhaps but the principle of the scheme—namely, that medical defence should be supplied for the present in connexion with the British Medical Association until such time as the movement for medical defence is able to run alone and to pay its way.

Dr. BIGGS then put the motion when seven voted for it and ten against.

Dr. BIGGS then put a motion in favour of the scheme as it stood and two voted for it.

Sir VICTOR HORSLEY having suggested that a motion approving the principle of the scheme would be in order,

Dr. L. S. MCMANUS proposed "that we adopt the principle of the scheme, thus reserving to ourselves the right to criticise its provisions." On Dr. BIGGS'S suggestion the words were added "and that the matter be referred to the committee of the division."

Dr. H. EVANS seconded the motion and ten having voted in its favour Dr. BIGGS declared it carried.

Dr. BIGGS then proposed a vote of thanks to those who had come from a distance to address the meeting and this was carried by acclamation, as also was a vote of thanks to Colonel Martin for the use of the room.

ANNUAL DINNER OF THE EPIDEMIOLOGICAL SOCIETY OF LONDON.

THE fifty-fourth anniversary of the foundation of this society was celebrated by an eminently successful dinner which took place at the Grand Hotel, London, on May 12th, under the chairmanship of the President, Dr. B. A. WHITELEGGE, C.B., chief inspector of factories. There was a numerous attendance and the guests included two very distinguished foreign representatives of sanitary administration—namely, Privy Councillor Dr. Moritz Pistor of the Ministry of the Interior of the Kingdom of Prussia and M. Henri Monod of the Ministry of the Interior of France.

After the usual loyal toasts "The House of Commons" was proposed by Mr. BALFOUR-BROWNE, K.C., and responded to by Dr. C. F. HUTCHINSON, M.P., who in the course of an amusing speech referred to the recently-formed medical party in the House of Commons. It was hoped that this party would form the nucleus of what in the future would prove a much larger party and that it would have before it an increasing sphere of usefulness in focussing and furthering in the House measures which concerned the public health or the welfare of the medical profession. The medical profession was but poorly represented in the House of Commons in comparison with the legal profession. The medical party would, Dr. Hutchinson felt sure, be always glad to receive the advice and assistance of such societies as the Epidemiological Society and he trusted that the society would tender such advice when it appeared to be desirable.

Sir WILLIAM S. CHURCH, Bart., President of the Royal College of Physicians of London, proposed the toast of the "Naval and Military Medical Services," and in the unavoidable absence of Sir Henry F. Norbury, K.C.B., Colonel J. LANE NOTTER, R.A.M.C., responded for both services.

In proposing "The Epidemiological Society" the PRESIDENT touched briefly upon the foundation and the development of the society and stated that of the many founders who took part in the initiation of the society in 1850 there was but one survivor, Sir John Simon, K.C.B., F.R.S. The President had at the beginning of the dinner sent to Sir John Simon a telegram of greeting from the society and he had just received a courteous acknowledgment. The society was, the President added, in an eminently flourishing condition and the last volume of the Transactions had been so highly appreciated that it was out of print almost as soon as it was published. Most of the foreign contributions which the society had recently received were due to the interest taken in its affairs by its former President, the late Professor W. H. Corfield.

Mr. SHIRLEY F. MURPHY proposed the toast of "The Visitors," with which the names of Dr. Moritz Pistor and M. Henri Monod were coupled.

Dr. PISTOR, speaking in excellent English, expressed the great pleasure which it afforded him to have an opportunity of thanking the members of the society for their

kindness in inviting him to deliver an address at the forthcoming meeting. The invitation arose out of his friendship with the late Professor Corfield, a friendship which he had enjoyed since the International Congress of 1891. Decades ago Englishmen appreciated the power of the axiom laid down by the late Professor E. A. Parkes that "Prevention is better than cure," and England had demonstrated to the world what the State derived from the theory and practice of sanitary science.

M. MONOD, who spoke with great fluency in English, said that he felt his honorary membership of the Epidemiological Society to be not only a personal distinction but also a tangible sign of the society's interest in the improvement of public health in France. He then gave an historical and general outline of recent legislation on the subject of public health in France. A few years ago, he said, the French had practically no laws for the preservation of health; there was no law either as to the notification of infectious diseases or prescribing the measures to be taken in the case of such diseases or dealing with vaccination. The existing law for the protection of public health bears the date of Feb. 15th, 1902, and came into force last year. Of course, some time must elapse before it was fully understood and generally accepted by the people, a condition which was essential to the good working of such a law. In Germany both vaccination and revaccination had been made obligatory and the French legislature, recognising that by this means small-pox could be kept in almost complete abeyance, had provided that the whole population should be vaccinated in the first year of life and revaccinated in the eleventh and twenty-first year. Proceeding to describe his own share in the preparation and enactment of these laws M. Monod said that more than 20 years ago, when he was prefect of the department of Calvados in Normandy, two of his friends persuaded him to accompany them on a visit to the First International Health Exhibition which took place in London in 1883. By what he saw there he was convinced of the social importance of public hygiene and did all that he could to encourage the movement in its favour which was beginning in France. He wrote a book to explain to his countrymen what was being done in England, he was placed at the head of the service that was created in consequence of the movement, and then had to prepare the law of which he had been speaking. At the last international congress of hygiene held in Brussels he had proposed the formation of an international public health office, the business of which would be the collection and distribution of sanitary information. That proposal was officially presented by France and by Italy to the Sanitary International Conference which met in Paris at the Ministry of Foreign Affairs at the end of last year. Nearly all the nations that were represented on that occasion signified their approval of the project and he hoped that his hearers would assist in creating a public opinion which would encourage the British Government to give its consent which had hitherto been withheld. Against cholera and plague there was only a single international convention which must govern the relations of France with all countries, whether or not they observe sound sanitary measures at home. It was impossible for the French to discriminate with regard to the shipping of different countries, but if there was such an international office or bureau of hygiene which would give all countries accurate information as to measures taken in each, then France or any other country might properly make its regulations less stringent towards progressive countries than towards those that pay little attention to public hygiene.

The toast of "The Chairman" was proposed by Dr. EDWARD C. SEATON and an appreciative reply from Dr. WHITELEGGE brought the meeting to a close.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held on May 12th, Sir WILLIAM S. CHURCH, Bart., K.C.B., the President, being in the chair.

The PRESIDENT announced that he had appointed Sir R. Douglas Powell and Dr. A. Newsholme delegates to represent the College at the forthcoming congress of the Sanitary Institute at Glasgow; also that he had nominated Dr. H. B. Donkin and Dr. Francis Warner to act on the committee to inquire into the physical disability of recruits, in the place of Dr. G. V. Poore and Dr. J. J. Pringle who had resigned.

The following Members elected to the Fellowship at the last meeting were admitted as Fellows: Dr. Bertram Louis Abrahams, Dr. Thomas Robert Bradshaw, Dr. William Cecil Bosanquet, Dr. John Francis Harpin Broadbent, Dr. Edmund Henry Colbeck, Dr. William John Gow, Dr. Arthur John Hall, Dr. Arthur Carlyle Latham, and Dr. Charles Arthur Mercier.

A report was received from Sir Lauder Brunton, the representative of the College at the International Congress on School Hygiene at Nuremberg. The subjects discussed were of great interest and importance and the Congress itself, under the presidency of His Royal Highness Prince Ludwig Ferdinand of Bavaria, was a great success. It had been arranged that the next Congress should be held in London in the year 1907.

A report was received from the committee of management, dated May 4th, 1904, recommending that the West Ham Municipal Technical Institute should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry, physics, and practical chemistry. This was adopted.

The regulations for the first year's study and first examination of the Conjoint Board, revised by the committee of management in accordance with the reports of July 22nd, 1903, and March 22nd, 1904, of the Special Conjoint Committee, were discussed and adopted. The revised regulations apply to candidates who commence their professional study on or after June 1st, 1904.

THE ROYAL SOCIETY CONVERSAZIONE.

THE exhibits presented to view at the conversazione of the Royal Society which was held on May 13th were more uniformly interesting than usual. No particular section of science was more strikingly illustrated than another, while all branches were represented. There was no brilliant discovery to illustrate as was the case last year when Sir William Crookes demonstrated the properties of radium and, indeed, some astonishment was expressed that in view of the remarkable developments which the study of radio-active compounds has opened up only one small exhibit illustrating this property was shown.

The most striking example, perhaps, of electric phenomena was afforded by the apparatus exhibited by Dr. J. A. Fleming, F.R.S., illustrating the conduct of stationary electric waves on spiral wires. The apparatus consists of a long spiral of fine wire to one end of which is applied a very rapid electric vibration produced by the discharge of a Leyden jar. These vibrations create an electric wave which travels along the spiral at the rate of about 1500 miles per second. This wave is reflected on the far end and returns again, establishing on the helix stationary electric waves in the same way as stationary aerial waves are produced in an organ pipe. The waves are made evident by the existence of points of maximum and minimum electric force called loops and nodes which are rendered visible by the use of a series of vacuum tubes which glow when held near the loops but not if placed near the nodes. By this means it is possible to measure the length of the electric waves. The practical interest of this experiment is that applications of this kind have been utilised for measuring wave lengths in wireless telegraphy. The experiments also prove that the specific inductive capacity of glass diminishes rapidly with an increase in the frequency of the electric force. The officials of the National Physical Laboratory explained a very interesting exhibit situated in the secretary's room. It consisted of a microphone-buzzer which gives a nearly pure note of 2000 volts per second. Vibrations are started in a steel rod placed close to a polarised electro-magnet which cause ripples in the microphone current and these in turn give an alternating current in the electro-magnet which by attracting the rod maintains it in steady vibration. The exhibit included an apparatus used to investigate the distribution of temperature in the field coils of electrical machinery and an apparatus also for rapid electric thermometry. Mr. H. Jackson had

a very beautiful exhibit illustrating some new phosphorescent materials. The examples shown were compounds of zinc, strontium, aluminium, and calcium which were prepared in order to show varying degrees of response to such exciting influences as violet and ultra-violet light, electric discharge, heat, and friction. It was shown that by varying the constitution of the compounds, as by increasing or diminishing their basic or acid character, the length of time during which the phosphorescent glow continues can be increased or lessened considerably. Further the property of glowing when the substance is heated can be made to persist apparently indefinitely. The effects were very beautiful. Dr. A. Scott exhibited some beautiful specimens of methyl and other related compounds of sulphur, selenium, and tellurium. The compounds served to show very clearly the close relationships of these three elements although methods employed in their preparation reveal notable differences in their behaviour with the same reagent. Considerable interest was taken in the new secondary battery designed for automobiles by Mr. Edison. In this battery the positive plate contains finely divided iron as the active material, while the negative plate has peroxide of nickel. The plates are immersed in a 20 per cent. solution of potash. A spring valve at the top is used for adding distilled water from time to time and this is the only attention required beyond electrical charging. The output is about from 13 to 14 watt hours per pound weight of cell, which is an enormous advance over the old lead accumulator. Close by Mr. Edison's exhibit Mr. Sherrard Cowper-Coles illustrated the interesting action that occurs between metals at a temperature many hundreds of degrees below their melting point. Thus iron, copper, aluminium, cobalt, and the rarer metals can be coated with zinc by placing them in zinc dust and heating them to a temperature of 200° or 300° below the melting point of zinc. The process is being used for hardening the surface of aluminium and copper alloys and for giving reflectors a hard and untarnishable surface. Professor H. B. Dixon, F.R.S., and Mr. G. W. A. Forster, B.Sc., exhibited an ingenious apparatus for determining the ignition point of gases. A vertical cylinder of Jena glass is employed, through which a current of oxygen is slowly passed upwards. The cylinder is heated electrically by a spiral of platinum wire and a thermo-couple is suspended in the cylinder, just below which is brought the orifice of a thin Jena glass tube through which the combustible gas is passed at a low pressure. The thermo-couple is gradually heated by radiation from the walls until the gas ignites. Dr. A. E. Wright exhibited his apparatus and explained the methods employed for measuring in the case of human blood its content in agglutinating substances, bactericidal substances, red blood corpuscles, albuminous substances, calcium salts, and salts generally. This exhibit excited considerable interest. Of the methods referred to some are employed, as our readers know, in connexion with the study of the changes produced in the blood when inoculated for typhoid, staphylococcic, and tuberculous infection; others are employed in connexion with the determination of the efficiency of the kidney and with the study of the conditions of blood which are associated with hæmorrhage, serous effusion, and intravascular coagulation. The apparatus employed consists in each case of ungraduated or, as the case may be, graduated capillary tubes which serve (*a*) for making progressive dilutions of the blood or of the reagent or bacterial culture which is added to the blood; and (*b*) for storing for the purpose of observation the series of mixtures of blood and reagent or blood and culture which are to be examined. The method by which progressive dilutions are made in uncalibrated tubes involves the employment of an air-bubble index. Where graduated tubes are appropriate these are graduated by the aid of an "automatic mercury pipette" or by a device involving the employment of alternate and equal volumes of water and mercury. Close by Dr. Alan B. Green exhibited some very interesting photographs illustrative of induced radio-activity of bacteria. Small masses of bacterial growth were exposed to the rays of ten milligrammes of radium bromide. In a large number of instances such masses when removed from the influence of the radium and placed between two thin sheets of inactive glass were capable of so affecting the sensitised film of a photographic plate with which they were brought into contact that on development in the ordinary way the plate showed a dark area corresponding to the shape of the bacterial mass. The photo-actinic rays proceeding from the bacteria which had been exposed to radium were capable of affecting a photographic plate through a double layer of lead foil. Professor Karl Pearson exhibited a series of photographs of English skulls illustrating normal and abnormal types from 1600 to 1850. There were two series, numbering upwards of 500 altogether, which were taken from old plague pits or graveyards in the City. The crania have been measured during the last five years at University College and the photographs are to illustrate forthcoming memoirs in *Biometrika*.

A very attractive and interesting exhibit was presented by Professor W. A. Herdman, F.R.S., illustrative of the pearl oyster fisheries of Ceylon. Samples of pearl oysters in various stages of growth were shown as were photographs and diagrams illustrating the methods employed on the pearl grounds. Specimens were also exhibited showing the structure of the pearl oyster and the position of the pearls in the body; there were shown also specimens of the cestode parasites which give rise to pearl formation and microscopic preparations illustrating the structure of the pearls. The recent investigations of the Ceylon pearl fisheries formed the subject of many beautiful illustrations by means of the electric lantern. Mr. Francis Fox exhibited some splendid stereoscopic views of the interior of the Simplon tunnel which is in course of construction through the Alps, its total length being 12¼ miles. It is interesting to point out that in this stupendous work the cutter known as the Brandt hydraulic drill is used, by means of which not only is rapid progress made but no dust is produced and thus, it is stated, miners' phthisis is avoided. The same gentleman gave a very interesting demonstration by means of the electric lantern in which photographic slides were used illustrative of the operations at the Simplon tunnel and the Victoria Falls and Gorge of the river Zambesi and the proposed bridge. Considerable interest was centred in the demonstration given by the Hon. C. A. Parsons of the auxetophone, an instrument which considerably accentuates the reproductions of the phonograph. The auxetophone is described as an air-operated valve which replaces the usual reproducing diaphragm of the phonograph. Selections of music, both vocal and instrumental, were reproduced in this apparatus and the results were very impressive.

The President, Sir William Huggins, O.M., K.C.B., D.C.L., received the guests, of whom there were a large number, including many members of the medical and legal professions and several well-known representatives of literature and art.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on May 12th, Mr. JOHN TWEEDY, the President, being in the chair.

Mr. Edward Ward, professor of surgery, Yorkshire College, Leeds, was introduced and after signing the by-laws was admitted a Fellow of the College. Mr. Marmaduke Stephen Mayou was introduced and the President handed to him the Jacksonian prize for the past year together with a document declaratory of the award. Dr. Thomas Rupert Hampden Bucknall was introduced and the President handed to him the John Hunter medal in bronze and a cheque for £50, the collegial triennial prize for 1901–03, together with a document declaratory of the award.

Diplomas of Membership were issued to 98 successful candidates.

Mr. A. Pearce Gould, M.B. Lond., F.R.C.S. Eng., was re-elected, and Mr. Arthur Quarry Silcock, M.D. Lond., F.R.C.S. Eng., was elected a member of the Court of Examiners.

The President reported that as Mr. Bernard Pitts was prevented by illness from taking part in the final examination for the licence in dental surgery he had appointed Sir H. G. Howse assessor to the Board of Examiners in dental surgery during that examination.

A report was received from the committee of management recommending the institution of a diploma in tropical medicine and was referred to a committee of the Council to consider and to report.

A report was received from the finance committee stating that the arrangements had been completed for the redemption of the land tax on the premises of the College with the exception of one house let on lease.

On the recommendation of the committee it was resolved that St. Paul's Eye and Ear Hospital, Liverpool, should be added to the list of ophthalmic hospitals recognised by the Examining Board in England.

A long letter was received from Dr. Clement Dukes of Rugby, delegate from the College to the International Congress of School Hygiene which was held at Nuremberg in April last and of which several notices have appeared in our columns.[1] In his comments on the work of the Congress Dr. Dukes expressed some of his own views as follows: (1) The teachers can instruct the elder girls before they leave school in some of the duties of motherhood and the importance of breast feeding to the mother as well as to the child; (2) the elder boys and girls should be taught the virtues of purity of life and the consequences of impurity to themselves and their children, and thus aid not only in the diminution of syphilis but in the restoration of the birth-rate to its legitimate place and thus remove connubial dishonour; (3) every child at school should be influenced on the alcohol question by teaching the virtue of temperance in the adult and of total abstinence for the child; (4) the child should be taught that tuberculosis is more a house disease than an infectious disease and that it can be exterminated by fresh air in the home, however small, and in the schoolroom and by cleanly habits; and (5) the elder children in all schools should be taught the meaning of vaccination: what it has done in the past and of what it is capable. The Congress is to be held in London in 1907.

The best thanks of the Council were given to Dr. Dukes for attending the Congress as the delegate of the College.

A letter was read from Mr. F. W. Collingwood addressed to the President, forwarding statistics relating to the examinations for admission to the Navy, Army, and Indian Medical Services, showing that candidates holding the L.R.C.P. Lond. and M.R.C.S. Eng. were: (1) 24·6 per cent. more successful than candidates drawn from all other sources; (2) 28 per cent more successful than the candidates holding degrees and diplomas from Scotch and Irish universities and colleges; (3) 23·5 per cent. more successful than the Scotch and Irish graduates; (4) 15·8 cent. more successful than the Edinburgh graduates; and (5) 34·3 per cent more successful than the Dublin graduates.

The PRESIDENT stated that he had written to thank Mr. Collingwood for his letter.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8639 births and 4705 deaths were registered during the week ending May 14th. The annual rate of mortality in these towns, which had been 16·0, 16·3, and 14·9 per 1000 in the three preceding weeks, rose again last week to 16·1 per 1000. In London the death-rate was 16·3 per 1000, while it averaged 16·0 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·0 in Smethwick, 7·9 in Barrow-in-Furness, 9·6 in Hornsey, 10·2 in Willesden and in Hastings, 10·3 in East Ham, and 10·5 in Handsworth (Staffs.); while the highest rates were 19·5 in Derby, 19·8 in Coventry, 21·3 in Manchester, 22·0 in Birmingham and in Newcastle-upon-Tyne, 22·3 in Rotherham, 23·8 in Burnley, and 24·0 in Warrington. The 4705 deaths in these towns last week included 525 which were referred to the principal infectious diseases, against 556, 527, and 514 in the three preceding weeks; of these 525 deaths 193 resulted from whooping-cough, 181 from measles, 53 from diphtheria, 39 from diarrhœa, 30 from scarlet fever, 18 from "fever" (principally enteric), and six from small-pox. No death from any of these diseases was registered last week in Leyton, Hastings, Southampton, Great Yarmouth, Devonport, West Bromwich, King's Norton, Grimsby, Barrow-in-Furness, or Tynemouth; among the other towns the highest death-rates from the principal infectious diseases were recorded in Hornsey, Birmingham, Wallasey, Warrington, Manchester, Huddersfield, Stockton-on-Tees, and Rhondda. The greatest proportional mortality from measles occurred in Hornsey, West Ham, Brighton, Manchester, Huddersfield, Leeds, Hull and Rhondda; from scarlet fever in Northampton; from diphtheria in Bristol and Hanley; from whooping-cough in Hornsey, Burton-on-Trent, Handsworth (Staffs.), Birmingham, Coventry, Wallasey, Warrington, Bolton, Bury, Blackburn, Stockton-on-Tees, and Newport (Mon.). The mortality from "fever" and from diarrhœa showed no marked excess in any of the large towns. Of the six fatal cases of small-pox registered in these towns last week one each belonged to Leicester, Nottingham, Derby, Sheffield, South Shields, and Gateshead. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 123, 104, and 88 on the three preceding Saturdays, had risen again to 99 on Saturday last, May 14th; 26 new cases were admitted during the week, against 23, 12, and 14 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 1600, against 1543, 1541, and 1590 at the end of the three preceding weeks; 239 new cases were admitted during the week, against 210, 185, and 242 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 254, 224, and 193 in the three preceding weeks, rose again last week to 231, and were five in excess of the number, in the corresponding period of last year. The causes of 47 or 1·0 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bolton, Salford, Bradford, Leeds, Cardiff, and 50 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Manchester, Huddersfield, Sheffield, Rotherham, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 21·0, 20·0, and 18·0 per 1000 in the three preceding weeks, further declined to 17·9 per 1000 during the week ending May 14th, but was 1·8 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·0 in Leith and 13·5 in Greenock, to 20·0 in Perth and 20·1 in Dundee. The 592 deaths in these towns included 28 which were referred to whooping-cough, 17 to measles, 15 to diarrhœa, four to scarlet fever, four to diphtheria, four to "fever," and three to small-pox. In all, 75 deaths resulted from the principal infectious diseases last week, against 79, 71, and 64 in the three preceding weeks. These 75 deaths were equal to an annual rate of 2·3 per 1000, which was 0·5 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 29, 22, and 25 in the three preceding weeks, rose again last week to 28, of which 11 were registered in Glasgow, eight in Aberdeen, four in Dundee, and three in Edinburgh. The deaths from measles, which had been 26, 19, and 10 in the three preceding weeks, increased to 17 last week and included nine in Glasgow, four in Greenock, and two in Edinburgh. The fatal cases of diarrhœa, which had been 11, 13, and nine in the three preceding weeks, rose again last week to 15, of which nine occurred in Glasgow and three in Dundee. The deaths from scarlet fever, which had been four, three, and four in the three preceding weeks, were again four last week, and were all registered in Glasgow. The fatal cases of diphtheria, which had been seven and three in the two preceding weeks, increased last week to four, of which three were recorded in Glasgow. The deaths referred to different forms of "fever," which had been four in each of the two preceding weeks, were again four last week, and included two in Edinburgh. The three fatal cases of small-pox corresponded with the number in each of the four preceding weeks, and were all registered in Glasgow. The deaths in these towns from diseases of the respiratory organs, which had been 115, 121, and 100 in the three preceding weeks, further declined last week to 90, and were slightly below the number in the corresponding period of last year. The causes of 21, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·3, 20·8, and 23·1 per 1000 in the three preceding weeks declined again to 21·6 per 1000 during the week ending May 14th. During the past four weeks the death-rate has averaged 22·2 per

[1] THE LANCET, April 9th (p. 1011), 16th (pp. 1072 and 1086), and 23rd (p. 1156), 1904.

1000, the rates during the same period being 15·7 in London and 17·8 in Edinburgh. The 157 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 11 from the number in the preceding week and included 17 which were referred to the principal infectious diseases, against ten, eight, and 18 in the three preceding weeks; of these, ten resulted from whooping-cough, three from "fever," two from measles, one from scarlet fever, and one from diphtheria, but not any from small-pox or diarrhœa. These 17 deaths were equal to an annual rate of 2·3 per 1000, the death-rates last week from the principal infectious diseases being 2·0 in London and 1·3 in Edinburgh. The fatal cases of whooping-cough, which had been five, three, and 11 in the three preceding weeks, declined again last week to ten. The deaths from "fever," which had been one and two in the two preceding weeks, further rose last week to three. The fatal cases of measles, which had been three, two, and four in the three preceding weeks, declined again last week to two. The 157 deaths in Dublin last week included 26 of children under one year of age and 47 of persons aged 60 years and upwards; the deaths of infants showed a marked decline, while those of elderly persons were considerably in excess of the number in the preceding week. One death from violence was registered, and 53, or more than a third, of the deaths occurred in public institutions. The causes of eight, or more than 5 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon Standish Thomas O'Grady has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated Feb. 18th, 1904). Staff Surgeon Charles Marsh Beadnell has been promoted to the rank of Fleet Surgeon in His Majesty's Fleet (dated May 13th, 1904).

The undermentioned Surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet:—Alworth Edward Merewether, Walter Scott Harcourt Sequeira, John Charles Groscort Reed and William Elmes Mathew (dated May 13th, 1904).

Surgeon J. D. S. Milln has been appointed to Haslar Hospital.

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants are confirmed in that rank:—F. C. Lambert, B. G. Patch, T. J. Wright, and A. C. Osburn.

Colonel (temporary Surgeon-General) W. F. Stevenson, C.B., is continued on the Active List as a Supernumerary to the Establishment, under the provisions of Article 473, Royal Warrant of Oct. 26th, 1900.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant A. A. MacKeith to be Surgeon-Captain (dated April 28th, 1904). Surgeon-Captain J. M. H. Martin to be Surgeon-Major (dated May 4th, 1904).

IMPERIAL YEOMANRY.

Fifeshire and Forfarshire: Surgeon-Captain T. F. Dewar to be Surgeon-Major (dated May 14th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 2nd Durham (Seaham): Surgeon-Lieutenant J. C. French resigns his commission (dated May 14th, 1904).

Rifle: 4th Volunteer Battalion the Royal Fusiliers (City of London Regiment): Brigade-Surgeon-Lieutenant-Colonel W. D. Waterhouse is borne as Supernumerary whilst holding the appointment of Senior Medical Officer of the 2nd London Volunteer Infantry Brigade (dated May 14th, 1904). 2nd Volunteer Battalion the Prince Albert's (Somersetshire Light Infantry): Surgeon-Lieutenant J. G. Bain to be Surgeon-Captain (dated May 14th, 1904). 5th (Perthshire Highland) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Lieutenant-Colonel J. Mackay resigns his commission and is granted the honorary rank of Surgeon-Colonel with permission to wear the prescribed uniform (dated May 14th, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Woolwich Companies: The resignation of Lieutenant E. B. Dowsett is cancelled. 2nd London Bearer Company: Lieutenant E. C. Montgomery-Smith to be Captain (dated May 14th, 1904).

THE WILTS AND DORSET BEARER COMPANY.

The King has approved of the Wilts and Dorset Bearer Company, R.A.M.C. (Volunteers), being formed into an independent unit.

THE WAR IN THE FAR EAST.

The manufacture of bandages is proceeding very actively in Moscow where three machines have arrived from Berlin equal to turning out 5000 bandages per day. There are 600 workers in the Red Cross workrooms in Moscow. The current of subscriptions grows in volume. At present special attention is paid to the needs of the steamer and barge hospitals.

RUSSIAN RED CROSS EXHIBITS FOR PARIS.

In the Russian section of the Paris International Exhibition, opening in the month of October next, there will be a large show of material in aid of the wounded, including a hospital tent of the Russian Red Cross Society in full working order.

THE RED CROSS IN WAR.

On Tuesday, May 17th, some interesting experiments were conducted at Bisley with inventions tending to minimise the inevitable sufferings undergone in warfare. The most striking perhaps was the First Aid Ivel motor which affords protection for two surgeons and the driver while passing through a fire zone to visit the wounded. The motor is also fitted with a large steel shield under shelter of which a bearer party can walk in safety. Another exhibit was a water cart with appliances for rapidly boiling water in large quantities, thus minimising the risks of enteric infection.

A GUIDE TO COMPANY TRAINING.

Under the title of "The Infantry Vade Mecum" Captain R. Temperley, 3rd Volunteer Battalion Northumberland Fusiliers, has reissued his compilation from official publications dealing with field training, the routine duty in camps, and other matters of interest to all ranks of infantry. The "Camp Hints" are brief but excellent though in directing that a needle and worsted should be drawn through a blister it would have been better if the author had given a word of caution against the use of dyed or soiled worsted. Non-military readers may gain many useful hints from a perusal of this little book which also throws light on the movements of troops at manœuvres, a matter of great mystery to the uninitiated. The Infantry Vade Mecum is published by Messrs. M. S. Dodds, Newcastle-on-Tyne, price 6*d*.

Correspondence.

"Audi alteram partem."

KING EDWARD'S HOSPITAL FUND FOR LONDON.

To the Editors of THE LANCET.

SIRS,—I inclose a letter from Sir John Aird generously offering to increase his annual subscription to this Fund by 100 guineas a year, this sum to be specially appropriated to endowment in order to raise the fixed annual income of the Fund from investments and other sources to £50,000 a year. May I venture to appeal through your columns to others who may be willing to follow his example?

I am, Sirs, yours faithfully,

HUGH C. SMITH,
Chairman of the Executive Committee.

May 11th, 1904.

[INCLOSURE.]

14, Hyde Park-terrace, W.,
May 9th, 1904.

DEAR MR. HUGH SMITH,—In reference to your letter about the King Edward's Hospital Fund for London in the *Times* of March 28th last, since the meeting on March 8th at Marlborough House, when His Royal Highness the Prince of Wales, President of the Fund, made the announcement that an anonymous donor was willing to give a sum—estimated to produce £4600 a year—if others would give the further necessary sum of double that amount by the end of this year in order to raise the annual income of the Fund from investments and other permanent sources to £50,000 a year, I have thought that the desired fund could in part be raised by annual subscriptions to be appropriated

to this particular purpose, and that many would be willing to increase their annual subscriptions for so good an object.

I hope the idea may commend itself to the executive committee and if so I shall be very pleased to become a subscriber of an additional 100 guineas.

Yours faithfully,
JOHN AIRD.

THE MEDICAL OFFICERS OF THE MACCLESFIELD BURIAL SOCIETY.

To the Editors of THE LANCET.

SIRS,—We, the undersigned medical practitioners, desire to call the attention of the medical profession to the unsatisfactory relationship which exists between the Macclesfield No. 1 General Burial Society and its two medical officers who have recently resigned. This society contains 6406 members and the remuneration paid is £250 per annum for medical attendance and an additional £100 per annum is paid to a local chemist for dispensing; the actual sum thus paid per head per annum is about 9½*d.* and this, we are of opinion, is grossly inadequate. The payments to the medical officers are based on the proportion of sick notes received by them, each note remaining valid for the current three months. This payment is made not on the number of members entitled to medical benefit, but each medical officer is paid according to the number of sick notes received by him from the members requiring medical attendance.

In consequence of the resignation of the society's two medical officers an attempt is being made by advertisements extensively circulated in the lay press to fill the vacancy thus caused. We are most anxious that intending applicants should be made acquainted with these facts as we feel confident that no medical practitioner would accept the position which extensive experience has shown to be unremunerative and which is in direct opposition to the strongly expressed opinion of the whole medical profession in the town.

We are, Sirs, yours faithfully,

JOHN L. RUSHTON, SENR.,
JAS. BRIERLEY HUGHES,
JOHN SOMERVILLE,
C. A. BRADLEY,
W. H. CLARKE,
C. AVERILL,
W. H. TOWNSEND STORRS,
J. HEDLEY MARSH,
ROBERT FROUDFOOT,
JOHN BRIERLEY HUGHES,
C. A. NEWBALD,
JOSEPH WESTMORLAND,
J. LATHAM RUSHTON.
L. T. FRASER,
A. M. CLARK.

Macclesfield, May 17th, 1904.

THE SO-CALLED PANCREATIC REACTION IN THE URINE.

To the Editors of THE LANCET.

SIRS,—The fact that Dr. C. E. Ham and Dr. J. B. Cleland have obtained crystals from normal urine and distilled water is in itself conclusive evidence that their technique is at fault. The source of fallacy that they apparently have not guarded against is the difference in solubility in hot and cold water of lead chloride. For while water at 0° C. only takes up 0·8 part, boiling water dissolves 4 parts. Even a few degrees difference in the temperature of the urine during neutralisation and that of the room in which it is finally left to stand will give rise to the presence of lead salt crystals such as they have met with. The undue concentration of the urine to which they refer would also facilitate the separation in crystalline form of the lead chloride held in solution by the warm urine, so that, as they remark, "the presence or absence of these crystals depends on the concentration of the liquid." Another point which has possibly contributed to their failure successfully to carry out the test is faulty filtration after neutralisation. Unless great care is taken in this process a considerable quantity of lead salts is liable to be carried through in the first part of the filtrate, especially with some samples of lead carbonate.

A little practice with pancreatic cases will demonstrate to your correspondents that the lead salt crystals they have met with are quite distinct both in behaviour and appearance from the crystals I have described in cases of pancreatic disease and that they are in no sense identical. In writing the description of the process for my Arris and Gale lecture I did not enter into these details as they are facts with which anyone having even an elementary knowledge of chemistry must be well acquainted, but I think that my directions are sufficiently explicit, provided that they are intelligently and carefully carried out.

My own experience since the publication of my lecture, and various communications I have received from other observers have only served to strengthen my conviction, that, in competent hands, the test is a useful aid to diagnosis when the results are considered in conjunction with the signs and symptoms found at the bedside, as is the case with all clinical pathological investigations. In my lecture it is distinctly stated that the theory concerning fat necrosis and glycerine excretion was only a working hypothesis on which the initial experiments were based and, whatever the doubts of Dr. Ham and Dr. Cleland may be as to its scientific basis, it has proved a useful starting point for a series of most interesting investigations.

I am, Sirs, yours faithfully,
P. J. CAMMIDGE.

Beaumont-street, W., May 16th, 1904.

To the Editors of THE LANCET.

SIRS,—With reference to the letter concerning Dr. P. J. Cammidge's test in THE LANCET of May 14th, p. 1378, I should like to be permitted to mention that I have been surprised to get also positive results in cases (chiefly surgical) where no pancreatic lesion was suspected. In the last case in which the test was applied—a case of chronic bronchitis and dilated heart, with ascites—there was no indication of abnormality in the pancreas post mortem. Though limited to the experience of few cases the news that the test answers with a simple solution of a lead salt makes me interested to learn the result of further discussion of the test, and supposing it to be a sound one is it not possible that cases of alimentary glycosuria, for instance, may also exhibit higher glycerine compounds in the urine at times when no sugar is present and thus render the reaction nugatory as indicative of purely pancreatic disease?

I am, Sirs, yours faithfully,
O. C. GRUNER, M.B. Lond.

Pathological Laboratory, Leeds General Infirmary,
May 17th, 1904.

SUPPURATIVE OTITIS.

To the Editors of THE LANCET.

SIRS,—The every-day neglect of one of the most distressing diseases of childhood, suppurative otitis, is still a reproach to a scientific and humane profession. I attribute this neglect to the common impression that the disease is generally incurable—a belief engendered by numerous failures with faulty methods of treatment. There has also arisen a well-founded distrust of the radical operation so called, attended as that operation is with grave risks to life and hearing. In these circumstances I think the results already attained by my methods of intrameatal treatment are worthy of the attention of medical men. I have now performed otectomy on more than 50 occasions. This is an operation I have found useful in obstinate cases and roughly consists in the removal of remains of the membrana tympani together with other diseased tissues in the middle ear and attic. It is admittedly a bold proceeding and one to be justified by results. I will briefly summarise them. The operation has not occasioned any serious disturbance in any of my cases. The temperature remains near the normal. Only one case has complained of severe pain, while all the children operated on have seemed to be wonderfully free from pain after operation. I have had two cases of facial paralysis that soon cleared up but no case of permanent facial disfigurement. With regard to hearing, there has been distinct improvement in more than half the cases; in one still under treatment there has been so far a decided decrease in auditory power. With regard to the main result aimed at—namely, disinfection of the ear—otectomy has proved of great assistance.

I must emphasise the point that the ears operated on were in a very bad condition. Many of them had been for months under skilled treatment but they were when seen by me in a most offensive condition. The usual treatment had been thoroughly tried, in many cases by well-known specialists, and had conspicuously failed. These ears are now sweet with the exception of one recently operated on and in most of them the discharge has quite ceased. A number of recent cases are now under treatment and are doing well. The conclusion I have arrived at is this, that otectomy renders possible the disinfection of a suppurating

ear and gives rise to little pain or other disturbance. It opens a new and important chapter in aural surgery and I invite the attention of medical men to a method that places the treatment of otorrhœa on a more satisfactory basis.

"Do ye hear the children weeping, oh, my brothers?
Ere the sorrow comes with years;
They are leaning their young heads against their mothers,
And *that* cannot stop their tears."

I am, Sirs, yours faithfully,
F. FAULDER WHITE.

Birmingham, May 10th, 1904.

NEURO-RETINITIS IN CHLOROSIS.

To the Editors of THE LANCET.

SIRS,—In his article on Neuro-Retinitis in Chlorosis published in THE LANCET of May 14th, p. 1345, Mr. J. Jameson Evans makes me responsible for the suggestion "that thrombosis of the cavernous sinus is the primary cause of the neuro-retinitis." As no reference is given I cannot say upon what this statement is founded but I must decline to accept it as an accurate interpretation of what I have written on the subject of optic neuritis in chlorosis. It is true I have advanced various arguments in support of the view that thrombus formation in one or more of the intracranial veins or sinuses is the probable cause of this condition but I have expressly disclaimed the proposition that to produce such a result the thrombus must needs occupy the cavernous sinus. In an article published in 1902[1] I wrote: "..... It is not necessary to assume that to produce optic neuritis a thrombus must be situated so as mechanically to interfere with the venous return from the eyeballs. A thrombus once formed is for all practical purposes a tumour in the sense that it is a 'foreign body' or 'adventitious product' within the skull. And whatever conflict of opinion may yet exist regarding the manner in which cerebral tumours cause optic neuritis it is certain neither the size nor the position of the tumour is the determining factor. A thrombus in this respect doubtless behaves in the fashion set by other forms of 'tumour.'" This is an entirely different suggestion from the one with which I am credited in Mr. Evans's article and I shall be obliged if you will permit me to correct the mistake through the medium of your columns.

I am, Sirs, yours faithfully,
Harley-street, W., May 16th, 1904. C. O. HAWTHORNE.

THE OLD HARDSHIP OF LONDON MEDICAL STUDENTS.

To the Editors of THE LANCET.

SIRS,—Your annotation in THE LANCET of May 7th, p. 1293, on the Old Hardship of London Medical Students reminds me of my own case, and I shall be gratified if you will express your opinion as to whether I am justified or not in thinking myself hardly treated in these circumstances.

I am an M.R.C.S., L.R.C.P.; I qualified in 1892. I am an undergraduate of the University of London. Owing to circumstances I was unable to present myself for my final M.B., but was obliged to start practice in the country immediately I qualified. A few years ago I came here and in October, 1900, I went up for my M.B. I was referred in medicine only, not being weak in any other subject. I went up again in October, 1902, and was then referred in surgery only. I went up again in April, 1903, and was again referred in surgery only; on both these occasions I was not "weak" in the other subjects. Last October I again went up and was ploughed in midwifery only. Now I certainly do not know less of that subject than I did on the previous occasions as I had gone over the subject again, besides having had further clinical experience, and yet although on two occasions running I have thoroughly satisfied the examiners of my knowledge I am now told I am so ignorant that for that only I must be refused my degree.

You know, Sirs, the great expense and trouble that it is for a man in practice to go up for such a long examination. Surely there should be some appeal. I wrote to the medical dean and received a kind and sympathetic reply and he forwarded my letter to the registrar, but the registrar wrote saying it was very easy for a candidate to pass by a narrow margin on one occasion and to fail on the next, which was hardly *apropos*, as if I had passed by a narrow margin I should have been marked "weak." Apologising for troubling you, I am, Sirs, yours faithfully,
May 7th, 1904. HARD LINES.

[1] Brit. Med. Jour., Feb. 8th.

THE INSTITUTE OF MEDICAL SCIENCES AND UNIVERSITY COLLEGE.

To the Editors of THE LANCET.

SIRS,—A letter from Mr. T. Bailey Saunders to the *Times* of May 19th expresses very clearly the confusion which the gift of Sir Donald Currie to University College Hospital appears to have created and to which reference was made in your columns.[1] The writer points out that he does not understand the continued existence of University College, London, after its incorporation with the University of London. He also finds in the proposed continuance of the teaching of the subjects of preliminary and intermediate medical study at University College either an apparent opposition to the essential principle of an institute of medical sciences or an indication that concentration is to take place in more than one centre, or that the institute, if created is to have its site in Gower-street. Mr. Bailey Saunders was, it will be remembered, the secretary of the commission which ultimately led to the change of the University of London to its present condition. If it is not clear to him whether it is proposed that the institute of medical Sciences should compete with what will become an integral part of the University or whether there has been a misunderstanding about the institute, and that it is merely to be a change of title that is contemplated, I think some enlightenment should be vouchsafed. It is a new and not very welcome idea that after all that has been written on this subject we may one day be greeted with the announcement of the opening in Gower-street of an "Institute of Medical Sciences, vice University College, resigned." The subject is one which needs elucidation.

I am, Sirs, yours faithfully,
F.R.C.P.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The New Water-supply Scheme for Calcutta.—The Plague Epidemic and its Huge Mortality.—Septic Tank Installations in Bengal.

MUNICIPAL Calcutta is just now engrossed with the great scheme for an increased supply of drinking water put forward by its new engineer. According to the Act a constant service has to be installed throughout the city during the next two years but up to the present only the northern part of the town has been so supplied. It is found that the consumption under the constant supply equals about 24 gallons per head daily and the existing mains bringing the filtered water from Fulta by gravitation only supply about 20 gallons per head per day for the whole city. Already there is a cry for more water and it is stated by the native commissioners that the people of Calcutta are accustomed to use more water than the inhabitants of Europe and consequently require more. The question is how to obtain it, and the proposals put forward are (1) to construct a fresh main from Fulta, costing 21½ lakhs of rupees and giving an additional 12,000,000 gallons of water daily; or (2) to pump water into the two existing mains at 15 foot pressure so that 6,000 000 gallons extra could be obtained at an outlay of about one lakh and an annual cost of about half a lakh. The difference of expense is not so great as at first sight appears but the smaller scheme seems to find the more favour. It is a short-sighted policy and one which Calcutta will suffer for at no distant date. Apart from this increased supply the engineer proposes a scheme to obtain the necessary pressure in the distributing mains throughout the city by gravitation instead of by pumping. The proposal involves a capital outlay of no less than 33½ lakhs of rupees and consists in the construction of a steel reservoir capable of holding 5,000 000 gallons raised to a height of 85 feet at the floor. This is to be put up at the north of the town. It will be 265 feet square and 13 feet deep,

[1] THE LANCET, March 26th, 1904, p. 880.

covered with a galvanised iron roof, and supported by steel joists, beams, columns, and masonry. Two new trunk mains will be required as far as the centre of the city and it is calculated that a terminal head of fully 40 feet at the southern extremity of the town will be secured. The existing scheme for the constant supply will cost about 20 lakhs, but by the gravitation scheme three pumping-stations in the town costing about £6000 annually will be done away with and the valuable sites can be disposed of. There can be no question that the gravitation scheme proposed is better than the one already sanctioned and the ultimate cost to the ratepayers will probably not be any greater. In a sanitary point of view the chief question is the amount of supply. It is here that the commissioners seem to have adopted a short-sighted policy. An allowance of 25 gallons per head daily must be calculated for, and as Calcutta is rapidly growing and neighbouring suburban municipalities are supplied from Calcutta also the existing mains from the waterworks will prove insufficient even with the assistance of pumping. An additional main from the waterworks at Fulta with additional filter beds and sedimentation tanks will have to be constructed. There is no question fortunately as to the quality of the water, but the position at present is that Calcutta has to face a probable expenditure of about 60 lakhs of rupees in order to secure a sufficient and well-distributed supply.

Plague throughout India during the past fortnight has shown a very large death roll, nearly 100,000 deaths having been recorded. The total for the past week is 46,812. The Punjab returned 26,961 deaths, as against 19,322 a fortnight ago, but this is the only increase. The United Provinces had 6197 deaths, as against 8610; the Bombay Presidency 5128, as against 5331; Bengal 1942, as against 4810; Central India, 1288, as against 1469; Rajputana 1005, as against 1336; the Central Provinces 704, as against 1795; Bombay city 706, as against 1065; Calcutta 500, as against 574; and Karachi 294, as against 293. It will be seen, therefore, that an almost general decline has commenced. Later returns show more favourable figures in both Calcutta and Bombay and in each city the outbreak has been less severe than in former years.

The Government of Bengal has appointed a committee to consider various points concerning the large number of septic tanks recently installed in the mills on the banks of the river Hoogly, more especially as to the distance from the intakes of the Calcutta and Howrah supplies at which the effluents should be permitted to be discharged without further treatment, and also upon a standard of purity for the effluents. It is desired to know the amount of work which can be done by a septic tank under different conditions, the quantities of water required, and the efficacy of the effluent as a liquid manure. The committee will report on the working of the existing tank installations in Bengal and on the means which should be adopted to render the system efficient and free from objection. The Sanitary Board for Bengal having been consulted refers to three methods for dealing with the effluent: (1) by turning it on to the land; (2) by using it as a feeder water for boilers; and (3) by drainage into the river after filtration through sand. A satisfactory solution to these questions will undoubtedly give a very great impetus to the more general adoption of the bacterial treatment of sewage in this part of India.

April 29th.

SOCIETY FOR THE STATE REGISTRATION OF TRAINED NURSES.—The annual meeting of the supporters of this society was held on May 13th at 20, Hanover-square, London, W., when Miss Louisa Stevenson presided. The annual report, a lengthy document which was read by the honorary secretary, stated that 469 applications for membership of the society from matrons and certificated nurses had been accepted during the year. It was decided that ladies and gentlemen not connected with nursing should be eligible for election as associates of the society and that the annual subscription for such associates should be 5s. On the motion of Mr. H. J. Tennant, M.P., seconded by Lady Helen Munro-Ferguson, a proposal approving the Bill for the Registration of Nurses introduced into the House of Commons by Dr. R. Farquharson, M.P., and urging that it is desirable, in the public interest, that a select committee should be appointed to inquire into the whole nursing question, was adopted.

THE FRENCH MUNICIPAL ELECTIONS AND THE NEW PUBLIC HEALTH ACT.

(FROM A SPECIAL CORRESPONDENT.)

THE municipal elections held throughout France are now concluded. As usual the candidates have made loud professions of their devotion to public interests but, and this is quite contrary to the usual practice, they will on this occasion be called upon to fulfil these promises, at least in one of the most important departments of public administration. It is not the electors who will require the elected to carry out their promises. This they might have done on any or on all previous occasions, nevertheless there has been continued and gross neglect of urgent public interests. So much is this the case that the central Government has been compelled to interfere and now a new law renders obligatory what was formerly optional. To the municipalities appertains the duty of taking the necessary measures for the preservation of public health—notably in matters relating to water-supply and drainage. These and other kindred matters have been shamefully neglected or else exploited for party purposes. Instead of seeking to do what was best in the circumstances it sufficed that one party should advocate a particular scheme for the other party to attack and to denounce the scheme. Then when, after perhaps many years of wrangling, a scheme is finally adopted it may after all not be applied. The opposition may come into office before it can be realised. Then, of course, the new municipal council will not trouble itself to carry out a scheme which its members have constantly denounced as bad. Or, what is perhaps even worse, the scheme may be actually and to a large extent carried out before the council is defeated and the rival party comes into office. It is then too late for the new administration to prevent the adoption and the application of the scheme. The contracts have been signed, the works have been commenced, and there is no possibility of receding. The scheme is therefore continued, but a thousand and one petty obstacles arise because the responsible authority has no interest in the success of the undertaking. On the contrary, it has always declared that it could not be a success. This, briefly, is the history of more than one of the largest towns of France, especially in regard to general drainage and sewerage schemes. Now, however, there is legitimate ground to hope that this sort of obstruction will not continue. Much of it is due to the optional character of the schemes for sanitary reform. These might or might not be carried out, and while an element of doubt was allowed to subsist it left the door open for contentions.

To-day the new law on public health is in force. The municipal functionaries now in office are the first which have been elected since this Act has become law. Therefore we are face to face with a new departure in the history of of sanitation. Sanitary works may be rendered obligatory. The municipalities are no longer merely called upon, or invited or expected, to prepare schemes for drainage or water-supply; they can be positively ordered to see to these matters and that without any further waste of time. Article 9 of the Act says:—

> When during three years consecutively the number of deaths in a commune has exceeded the average mortality of France the prefect must instruct the departmental council of hygiene to proceed itself or by the sanitary commission of the circumscription to hold an investigation on the sanitary conditions of the commune.

The important words in this clause are somewhat freely translated into "must instruct." The French text is: "*Le préfet est tenu de charger*"—literally, "The prefect is beholden or held to charge the departmental council," &c. Still, and however this may be, there can be no doubt as to the obligatory character of this clause. Of course but for the context this clause would not amount to anything. To investigate and to report is but too often a convenient way of shelving the whole matter. But Clause 9 goes on elaborately to explain that if the investigation shows that there is a necessity to undertake public works the prefect must call upon the commune in question to act. If the commune nevertheless does not move in the matter the departmental council of hygiene is invited to deliberate on the question and the mayor of the commune concerned is obliged to appear and to explain why nothing has been done. But there may be

a conflict of opinion. The county or departmental council of hygiene may hold one opinion; the local authority, the borough or the urban district council as we should say, that is the commune, as the local unit of administration is called in France, may hold quite a different view of the situation. In that case the prefect must transmit both opinions to the Minister of the Interior who, if he thinks fit, will submit the points at issue to the Consultative Committee of Public Hygiene of France. This latter body then holds an inquiry and the conclusions of this inquiry have to be posted and rendered public to the inhabitants of the commune in question.

The experience acquired in the past has, however, fully demonstrated that with an unwilling municipality all such investigations, whether official or otherwise, all exhortations and denunciations, are of little or no use. There are elderly people, especially among the peasant class and rural populations, who cannot see why the younger generation should have better water and better drainage than they had. There are others who are more anxious to keep down taxation than to improve the sanitation of their commune and thus a majority in favour of doing nothing not infrequently governs the municipal elections. In large towns it is the rivalry of schemes combined with the rivalry of political parties which more frequently retards the application of important sanitary measures. What then is to be done when the highest technical authority in France has pronounced its opinion and nevertheless the local authorities continue to remain obdurate? The Act says that the prefect must summon the commune to proceed. If within a month of this summons the commune has not pledged itself to act accordingly or if in three months' time some steps have not been taken towards the execution of these works a decree of the President of the Republic is issued by the Council of State ordering the execution of the works and determining under what conditions they shall be done. The question of the payment is not absolutely settled by Article 9 of the Act. It states that the commune cannot be compelled to pay for the cost of the sanitary works except a law is enacted to that effect. The Council General will decide, in accordance with Article 46 of the law of August 10th, 1871, to what extent the department should share in the expenses. Indeed, a previous article of the Act foresees sanitary undertakings in which several districts may be interested and provides for their uniting to constitute a joint board for the carrying out of the works.

Article 9, it will be seen, applies especially to large drainage schemes and similar undertakings, the very sort of public works which are so often postponed for the reasons given above. As for water-supply, this is dealt with separately in Article 10 of the new law. Here the question of the necessity of such a supply and the place from which it can be obtained is complicated by the proprietary rights of the people who may be living on the gathering grounds; therefore the new law says that the decree declaring that appropriation of a water source is "of public utility" shall determine, when this is necessary, that certain lands shall be bought, and further, that a certain protected zone shall be established so as to prevent the contamination of the water. On this protected zone it shall be forbidden to utilise any human manure or to dig wells unless a special authorisation to that effect has been obtained from the prefect. The proprietors who are thus prevented from making free use of their own land will receive some compensation. Small sources of potable water which do not yield more than two litres per second may be declared "of public utility" by a simple decree of the prefect. Thus for small villages a land owner can be expropriated and a public water-supply secured without the cumbersome and expensive process of referring the whole matter to the central authorities. The compensation given is the same as in other cases where private property is taken for public purposes.

The Act also enlarges and more clearly defines the powers of the authorities in dealing with insanitary houses and areas. The mayor and municipality must issue by-laws in regard to the construction of dwellings and the sanitary services. If the commune neglects to do this, then such by-laws are to be imposed on the commune by a decree of the prefect; so we have here again the representative of the central Government armed with the necessary powers to compel the local authorities to do their duty. Further in cases of urgency, such as the outbreak of an epidemic, the prefect may order the immediate execution of such public works as are of recognised necessity. The rights to compensation and other difficulties are reserved. They will be discussed afterwards; the first thing is to get the work done and not to endanger the health of the population while lawyers quibble over technicalities. The urgency which justifies such summary proceedings must be declared and recognised by a decree issued by the mayor and, in default of the mayor, by the prefect. Here, again, we have a useful proviso, for it often happens that a mayor would not care to vex, and perhaps to injure, the business prospects of his electors by publicly declaring that an epidemic had broken out in the town or the locality. This is especially the case in holiday and health resorts. The local interest then clashes with the general and national interest and therefore it is necessary that the prefect, who represents the wider interest, should have the power to counteract any manifestation of selfishness displayed by the representatives of local interest. Again, and without going to such lengths as this, it is very useful for the elected local authorities to be able to explain to their recalcitrant and unappreciative electors that in undertaking sanitary works they were forced to act and that the prefect would interfere if they attempted to postpone the public works which the health authorities had declared to be necessary.

The intervention of the prefect is sanctioned when the local authorities wilfully fail to accomplish their duty or else in cases of urgency. It is, however, not easy to define what constitutes urgency. In a Ministerial circular to the prefects explaining this law the opinion of Professor Cornil is quoted. Writing on behalf of the Consultative Committee of Public Hygiene of France Professor Cornil says that urgency arises "when an epidemic of unusual gravity breaks out, when there is some imminent danger to public health; when, as occurs in certain cases, the powers of the mayor do not suffice to cope with the gravity of the situation; when it is necessary to take at once certain measures which, according to the ordinary procedure, would entail formalities occasioning a long delay." The Ministerial circular very wisely explains that it is not necessary to wait till the danger is widespread. The gravity of the potentialities must be considered; the facility with which the disease in question may extend constitutes the danger and it is not necessary to wait till it has spread to take the precautionary and sanitary measures.

Thus it will be seen that the new Public Health Act of France gives the representatives of the central Government—that is to say, the prefects—the power to compel the local authorities to take necessary sanitary measures. Apart from many other matters of less difficulty, at least from the financial point of view, such as the notification of infectious diseases, vaccination, disinfection, the control of lodging-houses, &c., the Act, it will be seen, deals with the three most expensive problems. These are: first, general schemes of drainage; secondly, water-supply; and thirdly, insanitary areas, slum property, and unwholesome dwellings. All these three questions involve a large outlay and interference with private property. Therefore they invariably occasion much contention and bring about a great clash of interests. It requires a strong hand to deal with such conflicting elements and very often the local authorities, who are elected by the very persons whose private interests are at stake, do not possess this indispensable determination and strength. Therefore the occasional intervention of the prefect should prove of great advantage. The prefect at least should be absolutely immune from the effects of local pressure. His appointment depends on the Minister and not on the local voters. On the other hand the local voter has just exercised once again his right to vote. Will the new municipal councils, strengthened by the new Public Health Act and stirred on by the prefects who now possess greater powers to interfere, be able to proceed more rapidly than in the past? The delays and postponements which have occurred constitute a national scandal, notably in such towns as Toulon and Havre, where the permanent presence of typhoid fever and the virulence of the cholera epidemics have failed to act as a warning. For years the necessity of a general drainage scheme for these towns has been discussed but no such scheme has been carried out. Thousands of lives would certainly have been saved if proper sewers had been laid in the streets and the houses had been suitably drained. Scheme after scheme has been brought forward and fought over by the rival parties and now they rest in their respective pigeon-holes. The abominations prevailing during the cholera epidemics subsist to-day. It is to be hoped that the new law and the new municipalities will at last put an end to so disastrous a state of affairs.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Reply of the University to Antivivisectionists.

SOME time ago a memorial was sent to the council of the University by a number of persons—of whom I understand the majority were non-resident in Birmingham or even in the Midlands—asking that if vivisection were to be practised in the University permission should be withheld for experiments requiring a certificate exempting partially or entirely from the use of anæsthetics. To this memorial a reply has now been sent by Alderman Beale, the Vice-Chancellor of the University, in which he states that the council of the University recognises the anxiety of the memorialists for the welfare and humane treatment of animals, a feeling cordially shared by every member of both council and senate. They would point out that the certificate permitting a test to be made without an anæsthetic is intended for inoculation or feeding experiments, where the administration of an anæsthetic is wholly superfluous or impossible, and in any case would subject the animal to much more discomfort than the trivial puncture or scratch itself. The certificate is not used for other experiments. With the exception of these inoculation and feeding experiments, permission to retain the animal alive after an operation is rarely asked for and is only permitted when a special certificate has been granted for a particular experiment. Before such a certificate is issued the operator must satisfy the Home Office that the object of the research is important and that there is a sufficient prospect that valuable information may result from it. The medical faculty has reported that so far no such special certificate has been applied for, nor will any be applied for unless the Faculty itself has come to the conclusion that in the particular case the object in view is of great importance. The council accepts this assurance and having received a report upon the whole matter from the senate is of opinion that it is not necessary to impose any other conditions than the very stringent regulations laid down in the Act of Parliament and most fully carried out.

University Appointments, &c.

Dr. P. H. Pye-Smith, F.R.S., Vice-Chancellor of the University of London, has consented to deliver the address at the opening meeting of the faculty of medicine which will take place on the evening of Oct. 3rd. Dr. W. A. Potts has been appointed assistant lecturer in pharmacology, and Dr. R. M. Simon examiner for the Russell memorial prize for this year. The first Ingleby lecture for this year was delivered last week by Dr. C. J. Cullingworth. The lecturer devoted the first portion of his discourse to an account of the life of Dr. Clement Ingleby, in whose memory the lectureship and two scholarships were founded, after which he turned to the subject proper of his two lectures—viz., a plea for early exploration of the abdomen in suspected cases of cancer of the ovary.

Health of Birmingham: Fresh Case of Small-pox.

When the last patient was discharged from the small pox hospital on March 31st it was hoped that the city might remain free from that trouble for some time to come. At the same time it was pointed out that with Leicester and other foci of disease in the neighbourhood, and with the coming in of warmer weather leading to a greater circulation of the tramp population along the roads, it was highly probable that further cases might occur. As a matter of fact one has occurred, for a week ago a case was discovered in the person of a man who had been residing for some time previously at South Shields but had come to Birmingham to work about a week before his illness became obvious. As soon as his condition was diagnosed he was removed to the small-pox hospital and all the persons with whom he had been in contact were placed under observation. The city has lately been suffering from an unusually severe epidemic of whooping-cough and that disease is still very prevalent, the numbers of deaths registered from it in two recent weeks having been 34 and 21 respectively. There are about 200 scarlet fever patients in hospital.

Ear and Throat Hospital.

The fifty-ninth annual meeting of the supporters of this charity has recently been held under the presidency of Alderman J. H. Lloyd. The annual report stated that the total ordinary income of the hospital for the year amounted to £2225 and the ordinary expenditure to £2323, leaving an adverse balance of £98, notwithstanding that the in-patient department was closed for several months whilst building operations were in progress. The number of in-patients treated during the eight months that the wards were open was 781, as compared with 1191 during the previous 12 months, the daily average being 23, as compared with 24 in the previous year. The number of out-patients was 7872, as against 8124. Of the in patients 25 were admitted free, eight very urgent cases obtained some tickets after their admission, and 95 other cases were also treated, although unable to obtain the full number of tickets. The cases admitted from places beyond Birmingham and the suburbs were 281 in number, or 35·9 per cent., being 114 less than last year. Of the new out-patients 1295 cases were admitted from places beyond Birmingham and its suburbs, being 27·2 per cent., and 100 less than last year. The committee reported with regret that the donations to the hospital extension fund amounted only to £2015 towards the £8000 asked for, and to meet in part this deficiency the committee authorised the trustees to realise the corporation of Birmingham gas and water annuities. The hospital bank account was now overdrawn to the extent of £2198 and the committee begged for donations to enable it to reduce the amount and so to save the heavy charges and the interest thereon. The alterations and extensions were now complete and had fully realised the expectations of the committee in enabling the work of the hospital to be carried on in a more efficient manner.

Hanley Health Report for 1903.

Mr John Clare, medical officer of health, in his report for 1903 states that the area of the borough is 1768 acres and the population 63,166. The birth rate for the year was 34·8 per 1000, as compared with 35·1 for the previous year. The death rate was 16·4 but if the deaths of inhabitants of the borough in the workhouse, isolation hospital, and North Staffordshire Infirmary were included the death-rate was 19 per 1000. With the exception of December the death-rate was very low, but even including that month it was still below the average of the past ten years—viz., 19·6 per 1000. The zymotic death-rate was 2·3, or, including deaths in the isolation hospital, 3 per 1000. The deaths of children under one year of age to 1000 births were 170. This heavy infantile mortality is greatly to be deplored but so long as mothers work in the different manufactories instead of looking after their young infants there will be little amendment in this direction. The outbreak of small-pox which took place in the autumn of 1902 continued throughout 1903 up to October when the last case was notified. The cases that occurred up to July were dealt with by "quarantining" them but this plan was then abandoned as being extremely expensive and of very little use, besides entailing a large amount of harassing and arduous work on the sanitary officials. An empty house belonging to the corporation was fitted up where the inmates of infected households could be moved while their houses and clothes were being disinfected. They were then revaccinated and allowed to follow their employment, a close watch being kept on all who had been in contact with small-pox. No case occurred amongst them as it was found possible to revaccinate them all. A great deal of revaccination was done but Mr. Clare found it very difficult to impress upon the adult portion of the community the danger that they ran, the effects of primary vaccination having in a very great measure passed away. A lesson teaching how expensive and dangerous were vagrants to the community had been afforded and it was desirable that some steps should be taken to prevent them spreading disease. Amongst them revaccination should be compulsory. 472 cases of diphtheria were recorded. The principal causes of the spread of this disease were the contact of children in the schools and the neighbours visiting infected houses. There were 44 deaths in the borough and 32 in the hospital from it.

May 16th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Milk Standard.

AT the Oldham police-court on May 12th a case occurred which illustrates the difficulty of fixing a satisfactory milk standard. The difficulty is caused in great part by cows declining to give milk of uniform quality. The magistrate's

clerk said that in this case the difference between the standard and the analysis return was very small. "Farmers had protested against the order because the quality of milk varied so much according to the feeding, the weather, or whether the cow was in good, bad, or indifferent health." The milk from two cows in equally good health and condition, with the same feeding and surroundings, may also differ considerably in quality and that constantly. The defendant said the milk had deteriorated because he had been unable to buy food and he had given up selling milk—not apparently any too soon. In these circumstances the case was withdrawn. It almost seems as if the small cow-keeper will be unable to maintain his position.

"Herbal Treatment."

An inquest was held about ten days ago at Moston, a suburb of Manchester, which shows the strong hold that irregular treatment has on the minds of a certain class of Lancashire people. In this case, however, there was in addition neglect amounting to cruelty. A girl, aged 15 years, a worker in a mill, had been ailing for eight months. She had unfortunately a stepmother who was often advised by a neighbour to call in a medical man, but she was met with the reply that the girl was lazy and her illness a pretence. No medical man was called in and the girl died. Now comes the characteristic feature of the case. The father told the coroner that he did not send for a medical man as he thought his daughter was only suffering from indigestion. It seems that, like many of these people, he had an old book, "a medicine-book which he had bought 20 years ago." He said it had been his custom to treat ailments from prescriptions in this book and he gave his daughter "a decoction of herbs" for six weeks. "He did not know what the properties of the herbs were." Dr. McLean stated in evidence that the girl had been badly nourished and had died from peritonitis, that she must have been in great pain for months, and that proper medical treatment, though it might not have saved her life, would have prolonged it and would have alleviated her sufferings. The coroner spoke strongly of the conduct of the father and stepmother and the jury, who returned a verdict of death from natural causes, asked that they should be censured. It is difficult in such cases as these (which are far too frequent, not so much among the very poor as among those a little above them in the social scale, who may have had all the advantages of a board school education) to know how the various factors that cause such pitiful suffering are proportioned. Ignorant self-conceit, penurious dislike to paying even the smallest fees, suspicion, evidently strong in the stepmother, that this poor girl was malingering, and credulous trust in the prescriptions of the old medicine-book all had a share. The only satisfactory point in this case is that a Lancashire jury of the same class as the father and the stepmother agreed that they deserved censure.

River Purification.

At the last monthly meeting of the Mersey and Irwell Joint Committee an estimate of the expenditure for the year ending March 31st, 1905, was presented. The total is a net sum of £4524, which will be raised by calls upon the local authorities.

Moss Side to be Prosecuted.

At the same meeting Moss Side, a suburb which may be said to be in Manchester, though not of it, came under animadversion and legal proceedings are to be taken against the urban council. For the chief inspector found on a visit on April 19th about one-third of the whole volume of tank effluent passing directly to the Mersey through a hole cut in the ground communicating with the drains underneath. This hole was filled with paving stones, which, of course, provided a very effective way of not treating the sewage.

Sir Henry Roscoe's Report.

In Sir Henry Roscoe's report on the sewage effluents from the works of local authorities it is stated that of 41 samples 22 were good, eight were fair, two were unsatisfactory, and nine were bad. The Bolton corporation was to be informed that the effluent from its Rhodes farm was unsatisfactory. The purification of our rivers is a terribly slow process and we are paying heavily in money as well as in other ways for our own carelessness and for the neglect of our predecessors.

Mid-Cheshire Hospital Scheme.

The Cheshire county council has applied for the sanction of the Local Government Board to borrow £14,500 for the erection of an infectious diseases hospital to serve the districts of the Northwich rural and the Northwich, Winsford, and Middlewich urban councils. The district has a population of 54,735 and the hospital will accommodate 16 scarlet fever and ten typhoid fever patients. Eight other beds will be provided in an observation block. There will also be accommodation for a staff of 15 persons. The total cost is "estimated" at £14,235.

Ophthalmia in a Derbyshire Village.

The village of Staveley in Derbyshire is reported to be suffering from an epidemic of acute ophthalmia. The county medical officer reports that fully 200 children and their parents have been attacked within the past two months. The rural authorities have given notice that "unless medical attention be immediately sought by those affected a loss of eyesight will surely result."

May 17th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Bridgend Workhouse.

AN extension of the Bridgend workhouse has been frequently urged upon the board of guardians during the past ten years, not only by the medical officer (Mr. Wyndham Randall) but also by the Poor-law inspector of the Local Government Board. The latter official reported to the guardians in 1902 that on going through the house on one occasion he had found in the sick wards 38 patients in 31 beds and that there were no women's receiving ward, no suitable lying-in ward, and no proper vagrant wards. As recently as March last it was reported that there were not enough beds to accommodate all the inmates, so that one man had to sit up all night and another slept on a bench, and it was suggested that beds should be put up in the dining rooms. Plans for the provision of a new infirmary, casual wards, a porter's lodge, and other minor buildings were prepared some time ago and have been approved by the Local Government Board, but on several occasions the guardians have refused to carry out the work although the total estimated cost of £13,500 would only involve an annual expenditure for 30 years of a rate equal to ¼*d.* in the pound. The opposition to the scheme has at length been overcome and on May 14th it was decided by 42 votes to 20 to apply to the Local Government Board for sanction to borrow the sum named.

Proposed Reduction of the Salary of a Medical Officer of Health.

Allusion was made in THE LANCET of Jan. 23rd, p. 261, to the extraordinary proposal of the Aberavon town council to reduce the salary of the medical officer of health (Dr. J. Arnallt Jones) by including in the amount—£50 per annum—all fees to which he is entitled under the Infectious Disease (Notification) Acts. The assumption that the Local Government Board would not consent to this proposal has been borne out and it is to be hoped that the Board will not sanction the alternative proposal of the council to appoint a medical officer of health at the reduced salary of £25 per annum. Some years ago the sanitary committee of the Cornwall county council recommended that the minimum yearly remuneration of district medical officers of health in the county should be upon this basis—a preliminary fee of £10 for each district, with an additional £5 for every 1000 of population and an additional £2 for each 10,000 acres after the first 10,000. The population of Aberavon is about 8,000 and the area is 2211 acres, so that upon the Cornwall basis the minimum salary should be £50 per annum.

Cardiff Seamen's Hospital.

The new building which is to take the place of the hulk *Hamadryad* is now completed and only requires furnishing to be ready for occupation. There is accommodation for 60 patients. Of the £30,000 which the building has cost the late Marquis of Bute gave £20,000. A portion of this sum was given during his lifetime and the remainder was bequeathed. His trustees were directed upon the completion of the hospital to arrange that the sick received in the hospital should be served by sisters of some Roman Catholic religious order if such arrangements could be made. The question of giving effect to this clause in the will of the

late marquis has been before the hospital committee more than once. In June of last year the trustees were informed that provision would be made for Roman Catholic patients having nurses of their own faith and Roman Catholic priests would be given the same free access to patients in the new hospital as they are now given in the *Hamadryad* hospital ship. The trustees do not appear to consider that this would sufficiently carry out the wishes of the testator which they believe were that the indoor administration of the hospital should be intrusted to some Roman Catholic sisterhood competent to provide duly qualified nurses. When this view was placed before the committee on May 12th it was pointed out that the general public had subscribed to the building fund of the hospital on the understanding that it was to be administered on unsectarian lines and one member of the committee said that they might just as well close the wards as place them exclusively in charge of Roman Catholic nurses. Ultimately three members of the committee were deputed to confer with the trustees and it is confidently believed that a solution of the difficulty will be arrived at.

Medical and Surgical Degrees for the University of Wales.

It is proposed by the court of the University of Wales to apply for a supplemental charter for the creation of affiliated colleges. This is the outcome of an appeal from the Swansea Technical College to have the right to present candidates for degrees at the University. At the court held at Holyhead on May 13th Sir Isambard Owen, the senior deputy chancellor, moved that there should be contained in the supplemental charter power to grant degrees in medicine and surgery. In a communication supporting this suggestion Sir John Williams said it was not fair to students that they should be obliged to go elsewhere for a degree in medicine nor was it fair to the University, for it is deprived of the credit which would accrue to it from a distinguished roll of medical graduates. The proposal was unanimously adopted by the court.

The Prevention of Tuberculosis.

The annual meeting of the Gloucester, Somerset, and Wilts branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis was held at the Council House, Bristol, on May 13th under the presidency of Sir John Dickson Poynder, M.P. The chairman stated that the funds at their disposal had permitted the executive committee to extend operations in connexion with the Winsley Sanatorium. The original block of the building was practically completed and the second block which would enable them to take the full number of 60 patients was well in hand. Dr. L. A. Weatherly (chairman of the executive committee) said that £16,660 had been already received for the building and £2275 per annum for the maintenance fund. £6256 had still to be collected. The Bristol city council has now the right of nomination for 20 beds, having recently increased its subscription. All the beds of the sanatorium with the exception of five are now allotted to public bodies or private individuals. The institution will not be opened for the admission of patients until the end of November when the whole building will be completed.

May 16th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Glasgow and District Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis.

THE third annual meeting of this branch was held on May 12th in the Religious Institution rooms, Glasgow, when the Hon. the Lord Provost (Sir John Ure Primrose) presided. The council submitted the annual report on the procedure adopted for the year preceding March 31st last, in which it was stated that there have been a gradual and decided extension and development of the various methods by which the prevention, suppression, and treatment of consumption in the city and district can be successfully attained. The council reported especially on the distribution of pamphlets and literature and the holding of public meetings in the various districts of the city as a means of educating the public on the subject. With the view of arousing the interest of the members of the various benefit and friendly societies in the city and district in the proposed sanatorium at Lanark Dr. Alfred P. Hillier, secretary of the National Association, London, at the request of the council delivered an address at the annual public meeting held in November last on the Advantages of Sanatorium Treatment to Benefit and Friendly Societies. The lecturer dwelt on the position of friendly and benefit societies in Germany towards sanatoriums and discussed how far these societies in Great Britain might advantageously follow their example. The council was well satisfied with the success of that meeting. In connexion with the treatment of advanced cases the council regrets that meantime it is quite unable to undertake this part of the work. It has, however, been in conference with the subcommittee of the town council on tuberculosis and has suggested that the latter body might experimentally, at least, provide some hospital accommodation for such cases. This matter is still under consideration. With regard to sanatorium treatment, it was stated that plans had been adopted and approved by the county council for the erection of a pavilion and five double sleeping chalets. These are now in course of erection at Bellefield, Lanark, by Messrs. Speirs and Co., contractors, and will provide accommodation for 30 male patients as early, it is hoped, as June. It is expected that additional accommodation will be provided at no very distant date. Special reference was made to the valuable aid rendered by the editor and staff of the *Glasgow Evening News* in establishing and working up the "People's Fund," now exceeding £7400, also to the handsome donation of £5000 by the corporation of Glasgow towards the erection of the sanatorium. Graceful reference was also made to the practical interest taken by Lady Ure Primrose who two days before had invited and entertained to afternoon tea in the Royal Institute of Fine Arts those interested in the movement with the view of considering what part should be taken by the ladies of the city in the crusade against consumption. The council records with regret the death during the past year of Sir John Muir, Bart., and Mr. William Quarrier, two of the honorary vice-presidents of the branch. By the death of Mr. Quarrier, who was the pioneer in the adoption of sanatorium treatment for consumptives in Scotland, the branch has lost much valuable help.

Opening of Lanfine Home for Consumptives at Broomhill, Glasgow.

On May 14th the Duchess of Montrose opened the Lanfine Home for Consumptives. Sir James King, Bart., who opened the proceedings, said the new Home for Consumptives was an institution built by the generous bequest of an Ayrshire lady, Miss Martha Brown. It was noteworthy that this gift was the indirect result of the influence and advice of a lady whose name would ever be honoured at Broomhill, Miss Beatrice Clugston, who some 25 years ago had interested Miss Brown in the Broomhill Home. Together with Miss Clugston Miss Brown had formulated a scheme much like that now being carried out and at her death left to the institution the sum of £21,000. Of that sum £1000 went to aid outside pensioners, £5000 to erect the consumptive home, and the remaining £15,000 towards its annual endowment. The annual interest on the money left would be quite insufficient to provide for the maintenance of the new institution, for there would be a deficit of £500 per annum. As the ordinary revenue of Broomhill was during the past year £700 short of the expenditure it followed that £1200 more per annum would be required. Her Grace the Duchess of Montrose, in formally declaring the home open, said she considered it an honour and a privilege to be in some way associated with such an institution as the Lanfine Home. Miss Clugston was the source of inspiration for the home and with Miss Brown had conferred permanent benefits on humanity.

Aberdeen Royal Infirmary: Limited Accommodation for Patients.

The directors have issued the following circular to medical practitioners, public officials, and others, drawing attention to the limited accommodation at the hospital: "Owing to the limited accommodation in the infirmary (especially in the surgical side), the board of directors hereby intimate to all medical practitioners and others that before sending patients to the hospital it is necessary to communicate with the medical superintendent of the infirmary, with the view of ascertaining if accommodation be available. At the same time there should be forwarded a short statement as to the nature and urgency of

each case for information. If the services of any particular physician or surgeon are desired this should be mentioned in the application, when every endeavour will be made to meet the wishes of the applicant. Intimation of the date at which the patient can be admitted will be forwarded as soon as possible after the application has been received. Cases of accident are admitted at once."

Appointments.

Dr. John Innes has been unanimously recommended by the cleansing committee of the Aberdeen town council as medical officer to the cleansing and carting staff of the corporation.—Dr. J. Reid of Portsoy has been appointed in succession to Dr. W. L. Stewart certifying surgeon under the Factory and Workshop Act for the district of Portsoy, which includes Portsoy burgh and the civil parish of Fordyce.

Inverness Northern Infirmary: Annual Meeting.

The annual meeting of the managers of the Northern Infirmary was held in the council chamber, Inverness, on May 4th. Provost Arthur D. Ross presided and there was a good attendance. Mr. Duncan Shaw, W.S., honorary secretary, submitted the annual report of the house committee, and Mr. C. Marshall Brown, honorary treasurer, read the annual financial statement. The report of the house committee stated that the number of patients during the past year was about the average. Two outbreaks of scarlet fever, which became epidemic, had largely increased the number of patients in the fever wards. The number of patients at the first outbreak was as many as 47 and at the second outbreak they numbered 97. Great credit was due to the officials for the arrangements which made it possible to treat such a large number of patients. The financial statement showed that the ordinary income for the year amounted to £3986 13*s.* 3*d.* and the expenditure to £5356 13*s.* 1*d.*, leaving a deficiency of £1369 19*s.* 10*d.*, which had been met by applying legacies received during the year amounting to £809 19*s.* 7*d.* and the withdrawing of £560 from capital account. There was a further withdrawal of £439 to meet expenditure, the net result of the withdrawals being that the accumulated funds of the institution had been reduced by £1000 during the year. A strong appeal was made for increased public support in aid of the institution which was doing such valuable work. Provost Ross moved the adoption of the reports. He referred to the fact that out of 130 cases in the scarlet fever epidemic not a single death directly resulted from the fever. He mentioned that the cost per patient in the infirmary during the year was less than for some years past and this showed that economy was being used in the management of the work of the infirmary. In conclusion Provost Ross moved the reappointment of Mr. Duncan Shaw as honorary secretary and of Mr. C. Marshall Brown as honorary treasurer and that a vote of thanks should be given to them for their services during the past year. Ex-Provost Macbean seconded the motion which was cordially adopted.

May 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

National Children's Hospital, Dublin.

THE annual meeting of the supporters of the National Children's Hospital, Dublin, was held on May 13th in the hospital premises, Harcourt-street. Sir Charles Cameron, C.B., presided and there was a large attendance. Sir Lambert H. Ormsby, President of the Royal College of Surgeons in Ireland and surgeon to the institution, said that the three great objects of the hospital were: (1) the medical and surgical treatment of sick children, (2) the diffusion of knowledge among students regarding diseases of children, and (3) the training of nurses in the diseases peculiar to children.

The late Patrick Joseph Hayes, M.D. R.U.I., F.R.C.S. Edin.

The lamented death of Dr. P. J. Hayes took place on May 11th at Idrone-terrace, Blackrock. He filled for a quarter of a century the position of surgeon to the Mater Misericordiæ Hospital, Dublin, was widely known, and was in the enjoyment of a large practice. He was a Medical Fellow of the Royal University which conferred on him the degree of doctor of medicine *hon. causâ* and ever since the establishment of that University he had been one of its examiners in surgery. Dr. Hayes was consulting surgeon to St. Patrick's College, Maynooth, and to several other important institutions in Ireland. For many years he was well known as professor of surgery to the Catholic University and his memory will be long cherished by hundreds of medical men now scattered over Ireland, England, and the colonies. Some two years ago when his health began to fail he retired from practice and changed his residence from 18, Merrion square to Blackrock. He has left a widow and family to mourn their loss.

County Tipperary Lunatic Asylum.

At a meeting of the committee of the County Tipperary Asylum, held at Clonmel on May 10th, the salaries of Mr. S. G. Harvey and his assistant, Dr. P. Heffernan, were voluntarily increased by £100 and £50 respectively as a recognition of their efficient work by which the cost of maintenance of the institution had been reduced by about £1,000 a year.

Rainfall in April.

In the month of April in the north of Ireland the rainfall was 3·20 inches, rain falling on 29 days, an amount distinctly above the average (2·51 inches). The total amount of rainfall for this year is, so far, 12·76 inches, which is over the average (11·72 inches).

Medical Benevolent Fund Society.

At the annual meeting of the Belfast and County Antrim branch of this society held in the Medical Institute, Belfast, on May 13th, it was reported that a sum of £147 8*s.* 11*d.* had been remitted to the central authority in Dublin, being £12 13*s.* 6*d.* less than the previous year. A larger number of country subscribers are on the roll this year but in Belfast there are 15 subscribers fewer and the amount is less by £6 5*s.* 6*d.* than that of last year. Marked attention was drawn by the various speakers to the want of success of the society in Belfast where, it was said, 45 members of the profession do not subscribe. A vote of thanks was passed to the retiring President (Sir W. Whitla) for his services to the society and Dr. J. Nelson was appointed President.

Small-pox in Limavady Union.

The small-pox patients are all doing favourably and there are no fresh cases, a circumstance attributed by Dr. J. W. Watson, the medical officer of the workhouse, to the effect of revaccination. The guardians of Limavady have decided as an alternative to receiving into the workhouse destitute members of families of those bread-winners who had been or might be removed to the hospital as small-pox patients that these families should be given such temporary relief in their own homes as might be suited to the requirements of each case.

May 17th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Surgical Treatment of a Wound of the Heart.

AT the meeting of the Society of Surgery which was held on April 27th M. Richet read an account of an operation performed for wound of the heart. The left ventricle had been perforated by a revolver bullet eight millimetres in diameter which had also grazed the greater curvature of the stomach, the upper border of the spleen, and the lower border of the left lung. The patient, a man, aged 34 years, was taken into hospital 15 minutes after the accident. He was at once given injections of caffeine and of artificial serum and the operation was begun in one and a half hours after the accident. The wound of entrance was in the fifth interspace and there was pneumothorax. A large flap was made from the whole thickness of the thoracic wall and the two wounds in the heart and those in the pericardium had been sutured with catgut, when the heart ceased to beat despite direct massage of the organ being employed. M. Richet reminded the meeting that his first similar case had been successful and that he had shown the patient before the society in perfect health.

The Treatment of Urinary Incontinence by Lumbar Puncture.

At the meeting of the Hospitals Medical Society held on April 29th M. Babinski and M. Boisseau showed two patients

who had suffered from incontinence of urine and had been cured by lumbar puncture. The first patient was a young woman, aged 17 years, who ever since the age of seven years had suffered from nocturnal incontinence. Lumbar puncture was performed and 15 cubic centimetres of cerebro-spinal fluid were drawn off, the patient having no incontinence for the eight following days. From the ninth to the thirteenth day she had incontinence twice. A second puncture was then made and on the fifth and seventh day after this operation the patient had incontinence, but since that date, two months ago, she had had none. The second patient was syphilitic and for two years had suffered from spasmodic paraplegia and incontinence both of fæces and urine. The incontinence was not due to overfilling of the viscera but to paralysis of the sphincters. Lumbar puncture was performed and 15 cubic centimetres of fluid were withdrawn and the incontinence disappeared. The patient could pass the water voluntarily and felt both the need of passing water and the passage of the urine, which had never been the case previously. M. Babinski and M. Boisseau had seen two other cases of the same kind. The one was a child, 14 years old, who had suffered from incontinence both by night and day for six weeks. Belladonna had been tried without result but after lumbar puncture the diurnal incontinence disappeared altogether, but the nocturnal incontinence reappeared two months after the operation for one month, but only every four nights or so, and finally disappeared altogether 15 days after lumbar puncture had been performed for the second time. The other patient had suffered from paraplegia for a year and had had nocturnal incontinence for one month. After one lumbar puncture this incontinence disappeared and had not reappeared for a fortnight. Finally, a patient suffering from ataxia who had had incontinence for four years received no benefit from lumbar puncture, although three years previously the incontinence had ceased for 15 days after a lumbar puncture made for the purpose of a cytological examination. Without pretending to explain the mode of action of this treatment M. Babinski and M. Boisseau considered that it was a good method of treatment for a very troublesome affection and that it was quite worth while to make further researches into the matter.

May 17th.

Obituary.

M. DUCLAUX.

OUR Paris Correspondent writes:—"I have already announced to your readers the news of the death of M. Duclaux but it is only fitting that they should receive some further information as to the career of one whose name is universally known. The late director of the Pasteur Institute was a brilliant journalist as well as a professor and a notable fighter as well as a laboratory worker. All his life he was an indefatigable worker. He began as a mathematician in 1859, when he was doubtful whether to enter the École Polytechnique or the École Normale Superieur, but by 1862 he had become a physicist and chemist. In 1875 he took up the study of bio-chemistry and made researches by the side of his old master Pasteur at the dawn of the discoveries which were about to revolutionise medicine. About the same time he also studied meteorology at the Agricultural Institute and in 1883 published a treatise on Biological Chemistry, being from this date an intimate fellow worker with Pasteur. His book entitled 'Ferments et Maladies,' which appeared at about this time, is really a glorification of bacteriology and its prospects. Duclaux well foresaw the day when infectious diseases would practically cease their ravages and would not take toll of humanity by even a tenth part of what they did then. He worked indefatigably at every branch of microbiology, he taught at the Sorbonne, organised conferences in Paris and the provinces, founded the Annals of the Pasteur Institute in 1889, and kept alight the sacred fire among the students of microbiology. At the death of Pasteur Duclaux was chosen to carry on his work and then in 1896 it was that he published his magnificent work, 'Pasteur: the Story of a Genius.' Duclaux's next work was to attempt to codify in the work which was to extend to seven volumes all that was known about microbiology. Only the first four volumes have appeared but they comprise a veritable mine of facts concerning all that was known of the subject between 1899 and 1902. In the volume dealing with diastases he brings out his special knowledge of, and theories on, bio-chemistry. He insists on the fact that there are diastases of hydration and of dehydration, just as there are of oxidation and reduction, and it is well known to day what an important part the soluble ferments play as regards vital equilibrium. The latest works of Duclaux deal with social hygiene and with the relations of domestic hygiene and economy with chemistry. Duclaux belonged to the race of chemists who become medical men in imitation of the master whose tools have been the guiding star for their labours and it is fitting that regretful homage should be paid to the passing of one whose scientific work has been so valuable."

Medical News.

UNIVERSITY OF CAMBRIDGE.—The degree of Doctor of Science *honoris causâ* is to be conferred on Gustav Retzius, Emeritus Professor of Anatomy in the University of Stockholm, and Wilhelm Waldeyer, Professor of Anatomy in the University of Berlin. Mr. W. J. Sell, F.R.S., and Mr. H. J. H. Fenton, F.R.S., are to be appointed University Lecturers in Chemistry. At the congregation on May 12th the following degrees were conferred:—

Doctor of Medicine: A. E. Carver, Clare.
Bachelor of Medicine: B. Hudson, Clare; E. A. Ellis, Downing; and C. B. Goulden, non-collegiate.
Bachelor of Surgery: W. M. Mollison, King's; B. Hudson, Clare; E. M. Brown, Pembroke; W. V. Naish, Emmanuel; and C. B. Goulden, non-collegiate.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—At the Convocation held on April 30th the following degrees and diploma were conferred:—

Doctor in Medicine.—Charles Fisher, M.B., B.S. Durh.; Robert Bond Greaves, M.B., B.S. Durh.; Laurence McNabb, M.B., B.S., B.Hy., D.P.H. Durh.; Maurice Frederick Squire, M.B., B.S. Durh.; and Marmaduke Cordeux Wetherell, M.B., B.S. Durh.

Doctor in Medicine for Practitioners of 15 years' standing.—John Bradford, L.R.C.P. Edin., L.F.P.S.Glasg.; Myer Akiba Dutch, L.R.C.S., L.K.Q.C.P. Irel., D.P.H.; George Beiben Flux, M.R.C.S., L.R.C.P.; Harold Hendley, M.R.C.S., L.R.C.P., L.S.A.; Alfred Hooper, M.R.C.S., L.S.A.; Alan Rigden, M.R.C.S., L.R.C.P.; and William Swanson Sprent, L.R.C.S., L.K.Q.C.P. Irel.

Bachelor in Medicine (M.B.).—Thomas Engelhart Amyot, Robert Story Brown, and Herbert Christal, College of Medicine, Newcastle-upon-Tyne; Edgar Fletcher Edmunds, University College, Sheffield; Arthur Henry Fullerton, William Gibbons, and Albert James Gilbertson, College of Medicine, Newcastle-upon-Tyne; Walter Haward, St. Thomas's Hospital; William George Thomas Hepplewhite, Leonard Montgomery Markham, L.D.S., William John Phillips, B.Sc., Mary Raw, Frederick William Ritson, Constance Charlotte Robertson, John Malcolm Shaw, and Fred Stoker, College of Medicine, Newcastle-upon-Tyne; Otho Boyle Travers, Guy's Hospital; and William Frank Wilson and Hermann Wolfe, College of Medicine, Newcastle-upon-Tyne.

Bachelor in Surgery (B.S.).—Thomas Englehart Amyot, Robert Story Brown, and Herbert Christal, College of Medicine, Newcastle-upon-Tyne; Edgar Fletcher Edmunds, University College, Sheffield; William Gibbons and Albert James Gilbertson, College of Medicine, Newcastle-upon-Tyne; Cnella Mary Hankin, M.B., London School of Medicine for Women; Walter Haward, St. Thomas's Hospital; William George Thomas Hepplewhite, Leonard Montgomery Markham, L.D.S., William John Phillips, B.Sc., Mary Raw, Frederick William Ritson, Constance Charlotte Robertson, John Malcolm Shaw, and Fred Stoker, College of Medicine, Newcastle-upon-Tyne; Otho Boyle Travers, Guy's Hospital; and William Frank Wilson and Hermann Wolfe, College of Medicine, Newcastle-upon-Tyne.

Bachelor in Hygiene (B.Hy.).—William Edwin Peacock, M.D., B.S., D.P.H. Durh.; and Robert Stobo, M.B., C.M. Glasg.

Diploma in Public Health.—William Pitt Palmer, M.D., B.S., L.S.Sc. Durh.; and Robert Stobo, M.B., C.M. Glasg.

The Heath Scholarship founded in accordance with the will of the late Professor G. Y. Heath has been awarded by the Professor of Surgery in the University of Durham to Mr. W. G. Richardson, M.B. Durh., F.R.C.S. Eng., of Newcastle-upon-Tyne, for his essay on "The Development and Anatomy of the Prostate Gland, together with an account of its injuries and diseases and their surgical treatment." This scholarship is awarded every second year and is of the value of £200. A further grant from the scholarship funds to the extent of £50 was awarded to Mr. Richardson to assist in the reproduction of the drawings which accompanied the essay and in the mounting satisfactorily of 70 wet specimens.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—The following candidates having passed the requisite examinations of the Conjoint Board were admitted Diplomates in Public Health :—

Arthur Morton Barford, M.R.C.S. Eng., L.R.C.P. Lond., London; Arthur Murray Wood, M.B., Ch.B., Leith; John Christopher Thomson, M.D., Edinburgh; Margaret Merry Smith, M.B., Ch.B., Edinburgh; Chiranjiva Bharadwaja, L.R.C.P. & S.E., Edinburgh; Thomas Frederick Hillyer Blake, L.R.C.P. & S.E., Bournemouth; William Inglis Dunn, M.B., Ch.B., Edinburgh; Andrew Grant, M.B., Ch.B., Fortrose; James Leslie Marjoribanks, M.B., C.M., Edinburgh; James Andrew Hislop, L.R.C.P. & S.E., Glasgow; John Hally Meikle, M.B., C.M., Edinburgh; David Melville, M.D., Cape Colony; and William Alexander Reid, L.R.C.P. & S.E., Edinburgh.

At the same sederunt the following candidates passed the first examination in public health :—

Herbert De Carle Woodcock, L.R.C.P. & S.E., Leeds; Alfred Robert Maclurkin, M.B., Ch.B., Natal; Richard Steward, F.R.C.S.E., Glasgow; Alexander Fraser Jack, L.R.C.P. & S.E., Glasgow; and James Allison, M.B., C.M., Cambuslang.

David Dryburgh Gold, M.B., C.M., Markinch, passed the second examination in public health.

UNIVERSITY OF OXFORD: EXAMINATIONS FOR THE DEGREES OF B.M. AND B.CH.—The Board of the Faculty of Medicine gives notice that in the subjects of human anatomy, human physiology, pathology, medicine, surgery, and midwifery in the examinations for the degrees of B.M. and B.Ch. the written part of the examination shall consist of one paper of six questions, only five of which may be answered, and that in the subject of forensic medicine and public health (the first examination in which, under the new statute, will take place in Trinity term, 1905) the written part of the examination shall consist of a paper of six questions, of which three shall be allotted to each division of the subject. The Board of the Faculty of Medicine also gives notice that the regulations as to certificates to be produced by candidates before admission to the second examination for the degrees of B.M. and B.Ch. (Examination Statutes, pp. 192–94) have been struck out and replaced by the following regulations which will first come into effect in Trinity term, 1905. Candidates for the several parts of the examinations for the degrees of B.M. and B.Ch. are required, at the time of entering their names with the secretary to the boards of faculties, to produce to him certificates showing that they have attended courses on, and have had practical experience in, the following subjects:—1. Human anatomy. 2. Practical histology and practical physiology. 3. Practical pathology. 4. Post-mortem clerk. 5 (*a*) Hospital practice, surgery; (*b*) hospital practice, medicine. 6. Mental disease. 7. Infectious disease. 8. Vaccination. 9. Attendance on labours. 10. Hospital practice. Forms for these certificates can be obtained from the secretary to the boards of faculties, from whom also detailed information as to the necessary requirements for a certificate can be had on application.—Dr. J. A. Ormerod has been nominated by the Vice-Chancellor and Proctors as examiner in medicine, *pro hac vice*, for the final examination for the Degree of Bachelor of Medicine, in place of Dr. Frederick T. Roberts, who has been granted leave of absence. Dr. J. F. Payne, who had been appointed, is unable to serve.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST.—The Lord Mayor presided on May 13th at the festival dinner held at the Hotel Cecil, Strand, London, in aid of the funds of the City of London Hospital for Diseases of the Chest. This hospital, which was originally founded in Liverpool-street more than 50 years ago, is now situated in the heart of the east end at Victoria Park; it contains 164 beds, more than 20 of which are unfortunately closed for want of funds. The secretary of the hospital, Mr. H. T. D. Ryder, announced in the course of the evening that the subscription list amounted to over £3000. After the Lord Mayor had proposed the usual loyal toasts, which were enthusiastically received by those present, Alderman and Sheriff Sir John Knill in a sympathetic speech submitted the toast of "The Medical Staff," which received an ample acknowledgment from Dr. G. A. Heron, one of the physicians to the hospital. The Lord Mayor next gave the toast of "Prosperity to the City of London Hospital for Diseases of the Chest." He made an earnest appeal on behalf of the institution and showed how during the past year 848 in-patients had been admitted into the hospital, whilst the attendances in the out-patient department for the same period of time reached the total of 63,079. Before concluding the Lord Mayor referred to the want of increased and proper accommodation for the nursing staff, a matter which had been frequently brought to the notice of the committee of management by the medical staff of the hospital and the council of King Edward's Hospital Fund for London. Sir William S. Church was intrusted with the task of proposing the toast of "The Committee and Executive Staff," which was responded to by Alderman Sir G. W. Truscott. The secretary, Mr. Ryder, was the recipient of many congratulations on the success attending the dinner.

BRISTOL LUNATIC ASYLUM, STAPLETON.—The visiting committee of the Bristol Lunatic Asylum in its report for 1903 states that on Dec. 31st, 1903, there were 838 patients in the asylum (386 males and 452 females). The highest number of patients resident at one time was 879. The committee adds that the condition of patients has been satisfactory and expresses its appreciation of the manner in which the medical superintendent (Dr. H. A. Benham) and the staff generally have performed their duties during the past year.

LITERARY INTELLIGENCE. — Messrs. Baillière, Tindall, and Cox announce for publication this week a translation by Dr. Thomas Johnstone of Professor Kraepelin's classic work on "Clinical Psychiatry," hitherto attainable to students of mental diseases in the German language only. The same firm announce a new work on "Organic Nervous Diseases" by Professor M. Allen Starr. The new text-book will contain 26 coloured plates besides 275 drawings in black. Messrs. Baillière, Tindall, and Cox also announce a ninth edition of Dr. H. Macnaughton-Jones's manual on "Diseases of Women" and a second edition revised and enlarged of Dr. Baruch's work on the "Principles and Practice of Hydrotherapy."

PRESENTATIONS TO MEDICAL PRACTITIONERS.—At the George and Railway Hotel, Bristol, on May 8th, after the distribution of prizes and medallions to the successful candidates of the St. John Ambulance class of the Great Western Railway employés, Mr. H. F. Devis, L.R.C.P. Lond., M.R.C.S. Eng., was presented with a marble clock as a mark of appreciation of his services as honorary lecturer.—At a supper given by the Newton Abbot (Devon) division of the St. John Ambulance Association on May 11th the chairman, Mr. R. H. Grimbly, M.R.C.S. Eng., L.S.A., on behalf of the members, presented Mr. F. W. S. Stone, L.R.C.P. Lond., M.R.C.S. Eng., L.D.S. R.C.S. Eng., with a case of pipes as a mark of respect and esteem on the occasion of his leaving the district.

CENTRAL MIDWIVES BOARD.—A meeting of this Board was held at 6, Suffolk-street, London, S.W., on April 28th and adjourned to May 11th, when Dr. F. H. Champneys was re-elected chairman of the Board for the ensuing year and Mr. J. H. Johnstone, M.P., was re-elected honorary treasurer for the same period. Letters were read from the secretary of the Rotunda Hospital, Dublin, the general secretary of the Royal Academy of Medicine in Ireland, the Master of the Coombe Hospital, Dublin, and Professor J. W. Byers, physician to the Incorporated Belfast Maternity Hospital, asking the Board to reconsider its decision as to an alteration of its rules so as to allow pupil midwives trained in the chartered maternity hospitals of Ireland to be placed on the same footing as candidates for the examination of the Board producing the certificates prescribed by Forms III. and IV. in the schedule to the rules of the Board. It was resolved to reconsider the rules, so far as regarded the application contained in the letters, but a motion for replacing the certificates of personal attendance upon 20 cases by certificates of the master or senior medical officer of a hospital or institution where midwives are trained was lost. The further consideration of the matter was then adjourned to May 26th. After consideration of applications for certificates the names of 1037 women were passed under Section 2 of the Act and ordered for entry on the roll. The following shows the separate numbers of the various qualifications at present appearing on the roll: Royal College of Physicians of Ireland, 1; Obstetrical Society of London, 1213; Rotunda Hospital, 55; Coombe Hospital, 23; Queen Charlotte's Hospital, 73; Liverpool Lying-in Hospital, 20; British Lying-in Hospital, 3; Glasgow Maternity Hospital, 39; St. Mary's Hospital, Manchester, 78; Manchester Maternity Hospital, 1; City of London Lying-in Hospital, 7; Royal Maternity Hospital,

Edinburgh, 6; Salvation Army Maternity Hospital, 4; National Maternity Hospital, Dublin, 1; women in *bonâ-fide* practice, July, 1901, 2928; total enrolled, 4452. It was decided to appoint, if necessary, an inspector to visit and to report on institutions applying for recognition of certificates or approval as training schools and the consideration of the scheme of examinations to be instituted by the Board was also proceeded with.

MEDICAL MAGISTRATE.—Dr. David Arthur Davies has been made a justice of the peace for the borough of Swansea.

THE WELSH MEDICAL DINNER.—The Welsh Medical Dinner will be held at Prince's Restaurant, Piccadilly, London, on Wednesday next, May 25th, at 7 o'clock, under the presidency of Sir John Williams, Bart., M.D. Communications should be made to the honorary secretaries, Dr. T. P. Beddoes and Dr. William Lloyd, at 63, Wimpole-street, London, W.

DEVON AND EXETER DENTAL HOSPITAL.—The annual meeting of the subscribers to this institution was held at the Guildhall, Exeter, on May 13th, under the presidency of Prebendary J. G. Dangar, D.D. The annual report stated that during 1903 the patients numbered 4017. The financial statement showed a favourable balance of £21. The committee is anxious to have a new building so as to bring the hospital fully up to modern requirements and it has already received £1500 towards the building fund.

FERNLEY OBSERVATORY, SOUTHPORT.—In his report for 1903 Mr. Joseph Baxendell, the director, gives in the usual convenient tabular form the condensed results of an immense number of instrumental readings. The general conclusion is "an unusually stormy, wet, and sunless year." The total rainfall was 39·52 inches, or 5·91 inches above the average, the year being the wettest since 1886. The heaviest fall of rain in any one "rainfall day"—i.e., 24 hours ending at 9 A.M. next day—was 1·78 inches on Sept. 10th, and a lithographed copy of the tracing taken for this period by Halliwell's recording rain gauge is inserted as a frontispiece to the report. From the paragraph dealing with the work of the astronomical observatory it appears that the general public are permitted to visit the observatory on any "starlight Monday and Wednesday evening" between Sept 1st and April 15th.

YEOVIL SEWAGE WORKS.—A Local Government Board inquiry was held at Yeovil on May 10th into an application by the town council to borrow £8500 for additional expenses incurred in the completion of the sewage works. It was stated that the works had cost £31,206, which was over £8000 in excess of the sum originally sanctioned. As some necessary particulars were not available the inspector adjourned the inquiry *sine die*. In a report presented to the town council by the medical officer of health on the recent breakdown of the septic system of sewage disposal it was stated that the difficulty was a temporary one, due to the mechanical choking of the grit chamber with road refuse and trade refuse, such as hair and wool from the skin-dressing yards. He advocated the exclusion of this trade refuse from the sewers and its disposal at the factories where it was produced.

VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.—The annual banquet of the staff and members of the school took place at the Trocadéro Restaurant, London on May 12th, Brigade Surgeon Lieutenant-Colonel P. B. Giles, V.D., senior medical officer, being in the chair. The official guests were Surgeon-General Sir William Taylor, K.C.B., Director-General of the Army Medical Service; Colonel A. T. Sloggett, C.M.G., Principal Medical Officer, Home District; Surgeon-General Don; Lieutenant Colonel E. M. Wilson, C.B., C.M.G., D.S.O.; Lieutenant-Colonel G. Robinson, commanding the Royal Army Medical Corps depôt at Aldershot; Mr. Jonathan Hutchinson, F.R.S.; and Dr. J. Galloway, a member of the Army Medical Advisory Board. The chairman was supported by Brigade-Surgeon-Lieutenant-Colonel Andrew Clark, chairman of the Volunteer Medical Association, Brigade-Surgeon-Lieutenant-Colonel G. S. Elliston, Brigade-Surgeon-Lieutenant-Colonel J. Adams, Brigade-Surgeon-Lieutenant-Colonel Waterhouse, and many others. The toast of the evening, "The School," was ably proposed by the Director-General who laid great stress on the success of the staff, especially as regards the advanced or nursing class, the knowledge gained therein being of great use in the treatment of wounded after transfer to hospital. Brigade-Surgeon Lieutenant-Colonel Giles, in responding, thanked the commanding officers of the various metropolitan corps who had placed their headquarters at his disposal; he also thanked Major Maclure, the president, for his present of a handsome challenge shield which he had devoted to the nursing class. The year had been a successful one and the staff of the school was justly proud of the large class inspected by the Director-General. His thanks were due to the officers and non-commissioned officers' instructors for the *esprit de corps* which they had shown. Nearly 600 medical officers had passed through the school. Referring to the Royal Commission, the report of which would shortly be published, Surgeon-Lieutenant-Colonel Giles said that he had told the Commission on Militia and Volunteers that increased allowances for medical officers were necessary when attending camp. Mr. Hutchinson and Dr. Galloway returned thanks for the guests. The toast of "The Royal Army Medical Corps" was proposed by Brigade-Surgeon-Lieutenant-Colonel Elliston and suitably acknowledged by Colonel Sloggett. The attendance was a good one and excellent arrangements were made by Surgeon-Captain E. M. Callender, the mess president.

Parliamentary Intelligence.

HOUSE OF LORDS.

MONDAY, MAY 16TH.

A Revaccination Bill.

The Duke of NORTHUMBERLAND presented a Bill, which was read a first time, to provide for the revaccination of children after the age of 12 years.

HOUSE OF COMMONS.

WEDNESDAY, MAY 11TH.

Arsenical Poisoning.

Sir CUTHBERT QUILTER asked the President of the Local Government Board whether the conference between representatives of the Government departments concerned had yet taken place and whether he was in a position to announce what course he proposed to adopt to give effect to the recommendations of the Royal Commission on Arsenical Poisoning, more especially for the protection of the public against the use of injurious ingredients in beer and the fixing of a standard of purity.—Mr. LONG replied: Some preliminary questions have had to be considered before any conference could take place. These are now receiving my attention and I hope to arrive at a decision upon them very shortly.

Corporal Punishment.

Sir WALTER FOSTER asked the President of the Local Government Board whether in view of the punishments inflicted on children who were withdrawn from public supervision and protection in Poor-law institutions such as that inflicted on a boy in the St. Giles's Receiving Home in January last who was returned to the Westminster Union with both cheeks black, both arms black, and bruises on his legs, or that lately inflicted on a boy in the village community of the Wolverhampton guardians, the department would issue such regulations as would prevent excessive corporal punishment in the future by requiring the resignation of any officers guilty of such practices.—Mr. LONG replied: The regulations in force in respect of workhouses contain rules which are intended to prevent excessive corporal punishment. They prohibit corporal punishment altogether in the case of a girl and in the case of a boy direct that the rod or other instrument shall be approved by the guardians or visiting committee. Two officers must, if possible, be present when the punishment is given, and it is not to be inflicted until two hours have elapsed after the commission of the offence. The particulars of the punishment are required to be entered in a book which has to be laid before the guardians. Similar rules are contained in the special orders issued for Poor-law schools and like institutions. Any officer infringing the rules or administering excessive corporal punishment is liable to censure or removal from office as the case may require. The rules are, I think, sufficient usually to prevent undue punishment, but where a case of excessive punishment is reported to me I am prepared to deal with any officer in fault in the matter in such way as in the circumstances may be necessary. I may add that, as I understand, the bruises, &c., in the first case referred to in the question are not admitted to have been caused by punishment at all.

THURSDAY, MAY 12TH.

The Lunacy Commission.

An interesting debate on the Lunacy Commission took place on the vote of £15,259 for that body.

Sir JOHN BATTY TUKE initiated the discussion by making an elaborate speech on the subject. He said he desired to draw attention to the inadequate constitution of the English Lunacy Commission and to certain defects in action consequent upon this inadequacy. In order to guard himself he wished to say in the first place that he did not desire to attack individuals. He believed that the various members of the Commission were eminent and hard-working men and that any imperfection in work followed entirely on the paucity of their numbers.

What was the constitution of the Commission? It was presided over by an unpaid chairman and there were four unpaid commissioners. There were three medical and three legal commissioners paid at the rate of £1500 per annum. The duties of the unpaid commissioners were confined entirely to the office. The main duty of the paid commissioners was to visit and to report on 114,000 registered lunatics in England and Wales. In order to develop his argument he trusted he might be allowed to compare the condition of things in Scotland. In Scotland there were one unpaid chairman, two medical commissioners at £1200 per annum, two deputy commissioners at £600, and two unpaid legal commissioners. The duty of this board was to supervise the interests of 14,500 registered insane persons. Thus, in England three medical commissioners supervised 114,000 patients, whereas in Scotland four medical commissioners supervised 14,500. Putting it otherwise, in England there was one commissioner to 38,000 lunatics; in Scotland one commissioner to 3622; thus the supervising power in Scotland was ten times more than in England. He might be told that there was another supervising body in England—the Chancery Visitors in Lunacy. But they did not come into the equation in any way whatever. Their duties were confined to looking after the interests of wards in Chancery and had nothing to do with the discipline or management of lunatic asylums as a whole. They might be put out of count. With these figures they were forced to one of two conclusions: either that Scotland was ridiculously overmanned or that England was seriously undermanned. He was going to say scandalously undermanned, and, on the whole, he felt justified in using that expression. He hoped that he would be permitted to adduce the result of 40 years' experience to show that Scotland was in lunacy matters not overmanned, and he would adduce four reasons gained from personal experience to support his opinion. First as to the character of the supervision. In Scotland each lunatic resident in an asylum was visited twice in each year by a medical commissioner who performed his duty thoroughly. In England there was only one visitation except in private asylums. He was going to say leisurely were it not that that expression might lead to misconception; but the fact was that twice in each year in Scotland each patient had an opportunity of laying his case before the Commissioner who attended to it carefully and gave it real consideration. In the second place, he wished to adduce the fact that no action at law had for 40 years come before the Scottish courts either under the Lunacy Acts or under the common law. Thirdly, they never experienced lunacy scares in Scotland. They had no scandals and outbursts of popular feeling or adverse press comments. Fourthly, he was warranted in the assertion that there was as much public confidence in asylums and their administration in Scotland as there was in general infirmaries and hospitals, and that was saying a good deal. All the conditions engendered a feeling of confidence between the Board of Lunacy and the asylum authorities. Commissioners would act at once should occasion arise. They would take steps to abate any scandal, but in his long experience he had never known of any serious case demanding intervention. And further, there was a confidence established between the commissioners and the asylum authorities on the one hand and the public on the other. In all these circumstances they were able to work elastically under a much milder law than existed in England; and this in its turn worked beneficially for the insane, for, after all, he thought it would not be gainsaid that their benefit was, or should be, the first object of legislation. The lunatic was not made for the law but the law for the lunatic. Now, on the face of it, he thought it would be generally admitted that it was physically impossible for the same kind and quality of supervision to be carried out in England as in Scotland. Was it possible for a commissioner, however competent, distinguished, and hard-working, to overcome ten times the amount of work done by his brother across the Tweed and to get equally good results? It was curious and interesting to note the fact that this numerical inadequacy of the English Commission was getting worse and worse. He did not propose to go back into the history of the dark ages, say the eighteenth century when humanitarian feeling had not been aroused, as shown by the state of our prisons, by the condition of our madhouses, and by the cruel administration of the criminal law. Public feeling was aroused at the end of the century by the great Frenchman Pinel, and by a sturdy Quaker of York whose name he had the honour to bear although he could not prove any close relationship. Partly as a result of their action, in 1832 five physicians and two barristers were appointed as a sort of Commission and these numbers were increased in 1842 to seven physicians and four barristers. Still things did not work satisfactorily and on the suggestion of Lord Ashley, subsequently Earl of Shaftesbury, a Royal Commission was appointed on the recommendation of which the present Board of Commissioners in Lunacy was established in 1845. He was quite content to support his argument from that date. Under that Act the Commission was established exactly on the lines on which it existed at the present day. In 1842 there was reason to believe, although accurate statistics were not available, that the number of lunatics in England and Wales was 25,000. Accurate statistics were only arrived at in 1859, when 37,000 lunatics were on the register. In 1870 there were 54,000 and in 1903, 114,000. Thus, medical commissioners had to do four times the amount of work at the present day that they had to perform at the date of the establishment of the Commission. This stagnation must, he thought, appear extraordinary to the House, which he could not help thinking would be anxious to increase the number. Now he would be reminded, of course, that besides three medical commissioners there were three legal commissioners. He admitted to the full that legal commissioners were absolutely necessary on the Commission. They could not be dispensed with as representing the law and the public. In the board room their presence was of the utmost importance. But what was their chief duty? It was to visit asylums along with the medical commissioner. The legal commissioner and medical commissioner hunted in couples, the legal commissioner knowing nothing more of medicine or of lunacy or of asylum administration than Policeman X. What was the theory of this visitation? It was a remnant of old tradition, the idea being that during visits to an asylum some points of law might arise which could only be settled by the legal commissioner. He challenged the commission to adduce a single case within, let him say, the last 40 years, in which such an emergency had arisen. Any irregularity could be detected by the medical commissioner and be reported and considered in the board room. As a matter of fact, the legal commissioner only stood by. Patients were not presented individually but *en masse*. He wrote a report and, in fact, performed the work of a clerk. He had heard it suggested that the legal commissioner superintended the action of the medical commissioner, but this, he need hardly say, was a ridiculous assertion. The former was useless for inspection purposes, he was an anachronism, and reminded him of the old story of the new commandant at Potsdam, who, on going his rounds, found a sentry in a curiously out-of-the-way position. He asked what was the object of this sentry. No one could answer him till the files of the orderly room were looked out and it was found that some 50 years before a Royal Princess had planted a tree which she desired to be taken care of and a sentry was posted. The Princess and the tree were both dead but the sentry remained. He (Sir John) was convinced of the uselessness of these officers by his Scottish experience. There the legal commissioners confined themselves to the board-room and the inspection was carried out by one visiting medical commissioner. He might be told that the inspection of a legal commissioner gave confidence to the public. He had no hesitation in saying that there was not one in 10,000, perhaps not in 100,000, of the public that knew of his existence. As he had said, the legal commissioner was an absolutely necessary component part of the Commission in the board room but he was utterly useless in respect of inspection. He would ask the House to consider whether the performance of such duties as he had stated demanded the existence of three officers costing £4500 per annum. Surely one or two standing counsel at £500 a year each, or, as in Scotland, without salary, would be sufficient, and he was assured that in Scotland there was no shirking of work, no perfunctory performance of duties of those unpaid officials. Now he believed, in fact he knew, that an office undermanned to the extent that this was must work in wooden fashion. It must work bureaucratically, using the term in its worst sense. There was no sympathy, no elasticity; and, moreover, it worked under a hard law, and notwithstanding the rigidity of law and administration it did not command the same public confidence as the Commission in Scotland. The first step to obtain public confidence was to establish thorough supervision. That could be done by breaking England and Wales up into some four or five different districts, with a resident commissioner or commissioners in each. He would not say that they had better commissioners in Scotland, although they had men of great distinction on the Board. The success of their Commission was not dependent merely on the relative numerical superiority but on the fact that Scotland was a small country, where practically everybody knew everybody. If England were broken up into four or five districts with resident commissioners in each, these commissioners would, by the mere force of propinquity, know the character of each institution under their jurisdiction and obtain information as to the extent of unregistered and illegal establishments. As an illustration of what might be, and was going on in existing circumstances he would adduce the case of a man with no medical qualifications who was prosecuted early this year for maintaining an illegal establishment. He had continued doing this for 13 years and when detected he had seven patients all of whom were in a most miserable condition. This was not a single case. This could not have occurred in Scotland or in any district with a limited area. We are all deploring for humanitarian and economic reasons the rapid increase of lunacy in Great Britain. The rate ran up by thousands a year and had more than doubled in 30 years. In England, in the decade ending 1903, the annual average increase had been 2414. Whilst admitting that causes other than that which he was about to adduce had been in action, the reason to which he was about to draw attention for the increase of lunacy was the main one. We were manufacturing chronic lunacy day by day in our asylums and the fault did not lie at the door of the medical authorities of those institutions, than whom no more earnest and hard-working men existed. This was inevitable under the present condition of the law and his argument was that we could not hope for any relaxation in this respect until public confidence was established, and the first step in this direction was the one he had indicated. It was not his intention to deliver a lecture on the nature and treatment of the diseases comprised under the generic term of insanity. He wished to point out that medical men were precluded from treating the diseases adequately during the two critical stages of the complaint—the beginning and the end of each case. They were able to do so properly and efficiently amongst the moneyed classes and it would not be difficult to prove that as a consequence in these classes there was no increase of lunacy. They could treat them at their own homes or elsewhere, supply them with nurses and all the necessary accessories, but this meant money; but with the poorer classes they were obliged to leave matters to drift and that in face of symptoms they knew must inevitably result in acute insanity. They had to wait till the case was so pronounced as to warrant certification, thus losing the most valuable time during which the disease was most readily amenable to treatment. If of every 100 cases presenting themselves they excluded 20 as incurable, as *opprobria medicinæ*, of the 80 left 60 per cent. were amenable to treatment and that without asylum treatment. Inspectors could only adduce a concrete case in support of this assertion. An institution for the treatment of incipient cases of insanity had been established by the Glasgow county council and he found by its report that between 1890 and 1903 70 per cent. of cases treated were discharged cured. A proportion of cases of acute alcoholism—in itself a ripe cause of insanity—had been treated, but over and above a large number of incipient cases of insanity were treated to a satisfactory conclusion without being sent to an asylum. The London County Council was of the same mind. So convinced was that body of the necessity of such treatment that it promoted a Bill, introduced in another place last year, for the establishment of houses for this class of patient. The County Council sought for powers exercised in Scotland and not in England. In Scotland they were prepared for the increase of such establishments in consequence of general confidence in the Lunacy Board, but he doubted whether they were in England. He would allude very shortly to the other stage of the disease. A patient sent to an asylum was placed under the best conditions for recovery, but on his being discharged recovered he was in many cases utterly neglected. No term of convalescence was allowed, no after-care was possible except such as was afforded by one association in London, and accordingly large numbers relapsed and the asylum's recovery-rate of, say, 40 per cent. became in practice reduced to something like 25. Until they ceased manufacturing dementia in the way he had explained the number of lunatics must increase and no material change could be brought about until confidence was established. The first means to that end was an efficient Lunacy Commission. They would go on

building asylum after asylum for the reception of chronic cases. He gave way to no man in sympathy for the insane and in sympathy with their friends and relatives. But it was his duty to say that his opinion was that gross extravagance existed in asylum construction. He had conducted with good results an asylum in Scotland which cost about £200 per bed. Now they heard of £350 to £500, and even more, being expended, and this extravagance could only be arrested and controlled by efficient supervision. He did not wish to weaken his argument but he had to confess that in Scotland they were not altogether free from this charge. The whole lunacy question of Great Britain required examination—England mainly, Scotland to a much less extent; and to this end he appealed to the Home Secretary to appoint a select committee to consider the question as a whole. It was no good undertaking it piecemeal. He confidently predicted that if such a committee was established very material and important changes would be recommended and, he trusted, acted on. He had adduced certain reasons which sufficiently warranted his making this appeal, but he had one more. During the last 15 or 30 years a vast change had come over the general conception of insanity, certainly as regards the medical profession, and he believed to a certain extent the public. The department of the medical profession specialising in mental disease had advanced along with the advance in general medicine. As regards insanity it was difficult to express what this change was tersely, but in semi-technical terms he might say the insane person was no longer regarded as a psychological curiosity but as a pathological entity. He or she was a very sick man or woman demanding hospital treatment, treatment which was denied by every general hospital or infirmary in the kingdom. He feared he had trespassed too long on the indulgence of the Committee but he felt justified in doing so in that the matter was one of national importance. He was no enthusiast. He spoke with deliberation from very long experience and he knew that he would be supported by the great mass of his profession. He had no eloquence to depend on in advancing his claims except the eloquence of facts and figures. Again he begged to ask the Home Secretary to consider carefully the position. If he would accede to his request the right hon. gentleman would do much to alleviate the most wretched and dire disease which man was heir to—a disease which more than any other affected the happiness of friends and relatives. He asked the right hon. gentleman to remember that the nation was doing its best to stamp out tuberculosis and to eradicate cancer, but they were not doing their duty in respect of a disease which affected 3 per 1000 of the community and which if not arrested consigned its victim to a living tomb. He had spoken under a deep sense of responsibility. He was but a humble private Member of the House but he thought he might say that no one in it was so intimately acquainted with the subject and had he not done as he had done he felt that he would have failed in his duty to the public.

SIR MICHAEL FOSTER followed, associating himself warmly with the efforts of Sir John Batty Tuke to obtain an improvement in the lunacy laws. He considered that the urgent necessity for a large increase of the Commissioners in Lunacy was beyond doubt. Whether there should be an increase in the number of head commissioners or in the number of assistant commissioners was a matter of detail but there ought to be an increase in the number of medical commissioners. It must be remembered that when the Lunacy Laws were introduced they were more or less based on the view that the case of a person of unsound mind was a hopeless one and their main purpose was to protect the lunatic from ill-treatment, to protect the public against the lunatic, and to prevent a sane man from being taken for a lunatic. In no branch of science had there been greater progress during the last generation than in the knowledge of the brain and the central nervous system. That wonderful web of delicate fibre and cells was being gradually unravelled and day by day they were getting a command over the brain which was unknown when the Lunacy Laws were introduced. Though medical science had reduced other diseases, notably tuberculosis, lunacy if anything was on the increase. Where was the fault? He considered that one main fault was the present state of the Lunacy Laws. If they did not hinder they certainly did not facilitate the application of science to lunacy especially in the early stages. Great changes were needed. Besides an increase in the number of commissioners there was one very great change needed and it was in the making known of cases of insanity in the early stages. At present an insane person could not be brought adequately under treatment without the certificates of two medical men and that meant a petition, a declaration, and a magistrate's order. That was virtually an advertisement of insanity and as such it stood in the way of the desire of medical men to apply medical science to the cure of insanity in its early stages. In Scotland, on the certificate of a responsible medical man placed in the hands of a householder, an insane person could be kept in a private house under proper treatment. Why should that not apply in England? There was now a notification of infectious diseases and there would be no difficulty in the notification of a change in the central nervous system, and mere notification would be a very different thing to the advertisement of the present system. There should be some inquiry into the whole matter.

DR. R. FARQUHARSON took the same line. He considered that the case for inquiry was now nearly complete and he thought that a Royal Commission would be a much more dignified form of inquiry than a select committee. In the Bill brought forward in the House of Lords four years ago there was a provision to carry out the beneficent arrangement that existed in Scotland which allowed cases on the border line to be taken into the house of a private person and treated there for six months, the period during which successful treatment was possible. It was very important that insanity should be considered as a disease and studied as such and that the wretched old superstition that insanity in one of its members was a discredit to a family should be swept away. There ought to be special hospitals or special wards and special pathological institutions, and an excellent arrangement would be that there should be a notification of lunacy cases to the local authority. The local authority should empower the medical officer to visit the lunatic, and if he considered a further opinion necessary he should be enabled to appeal to the commissioners to that end. The number of commissioners was altogether inadequate.

DR HUTCHINSON contended that what was wanted was a decrease in the number of legal commissioners and an increase of medical commissioners.

After further debate by non-medical Members,

The ATTORNEY-GENERAL for England replied that it was not the view of the Government that a case had been made out for the appointment of a Royal Commission or a committee. The question was already pretty thoroughly understood. Personally he was not satisfied that there was proof of an actual increase in the amount of lunacy. Cases were now looked after as they were not under what he called the barbarous state of the law in the old days and there was less and less reluctance to allow patients to enter well-managed modern asylums. But if there was a real increase in the proportion of lunatics apart from an apparent increase it was not, he contended, due to any defect in the law or its administration but to the conditions of modern life. Under the much greater care taken of the young many physically and mentally feeble persons survived who in the old times would have disappeared in the early struggles for existence and in such cases strain and stress such as he had alluded to might send the mind over the precipice. He also contended that there was a very general and well-founded confidence in the way in which the Lunacy Laws were administered. As to the number of the commissioners, he would suggest that before they embarked on an increase of the staff they should see whether the work of the existing staff could not be rearranged with advantage. A great deal might be done by relaxing the provision of the law as to the association of the commissioners—a legal commissioner and a medical commissioner—on four of the six visits that were paid to each house in every year. Subject to proper provisions such a relaxation might be made, and a Bill which had more than once passed through the House of Lords, but owing to opposition in the House of Commons could not be passed into law, contained provision for that purpose. As to the objection to legal commissioners visiting the houses of lunatics in company with the medical commissioners the latter considered, he believed, that a great deal of good had been done through the association of the two. The Bill to which he had alluded also contained clauses relaxing the law in a way which would be found to give facilities for preventing the development of this terrible malady and yet providing adequate securities against the machinery being abused for any purpose of oppression. In conclusion he assured the House that all points raised in debate would be properly considered.

DR. FARQUHARSON asked whether the Lunacy Bill to which reference had been made would be reintroduced.

The ATTORNEY-GENERAL replied that while he was alive to the importance of the Bill he could not give a pledge that it would be reintroduced this session or next.

SIR E. STRACHEY considered the attitude of the Government unsatisfactory and he moved to reduce the vote as a protest.

The amendment was defeated by 216 votes to 126.

FRIDAY, MAY 13TH.

Ether for Manufacturing Purposes.

MR. GRAY asked the Chancellor of the Exchequer whether his attention had been drawn to the fact that ether from pure spirit should be used in the manufacture of certain articles required by the War Office, that this spirit was subject to a heavy duty and hence if the articles were to be manufactured at a reasonable price methylated ether must be substituted for the pure or the contract sent abroad where manufacturers obtained spirit duty free for manufacturing purposes, and whether in these circumstances he would consider the desirability of permitting the manufacture of such goods in bond under practicable conditions or of allowing the price paid by the War Office for the duty received by the Excise.—THE CHANCELLOR OF THE EXCHEQUER replied: Section 8 of the Finance Act of 1902 appears to cover such cases as the hon. Member has in view. Manufacturers desiring to be allowed the benefit of the section should address an application to the Board of Inland Revenue by which it will be carefully considered.

MONDAY, MAY 16TH.

Results from Vivisection.

MR. WEIR asked the Home Secretary whether he could state what scientific results had been derived from the vivisection of dogs and other animals during the past year.—MR. AKERS-DOUGLAS replied: I think the honourable Member is asking rather too much if he expects me to compress into the form of an answer to a question the scientific results of a year's experimental research. I would refer him to the periodical transactions of the learned societies, to various essays, and to other scattered publications, both past and future, for no doubt some of last year's results have not yet been published.

Disease on the Rand.

MR. HERBERT SAMUEL asked the Colonial Secretary whether he would present to the House the report of the committee of mine medical men who recently reported to the Transvaal Commissioner of Native Affairs on the causes of disease among natives on the Rand.—MR. LYTTELTON replied: I have not been informed of any report of a committee of mine medical men later than that of June 6th, 1905, which has been already published.

TUESDAY, MAY 17TH.

Miners' Phthisis.

DR. HUTCHINSON asked the Secretary of State for the Colonies whether his attention had been drawn to the observations of Dr. Haldane at an inquest held on a Cornish miner at Bisson to the effect that rock drill was dangerous and should be done by use of the water jet; and, if so, whether he would take steps to make the use of the water jet compulsory in all metalliferous mines in the Transvaal.—MR. LYTTELTON replied: I have not seen Dr. Haldane's observations referred to, but I have read an interesting paper by Mr. Francis Fox, M.I.C.E., on this subject; and I also learn from the Home Office that the inquiry which has been made into miners' phthisis in Cornwall by Dr. Haldane, Mr. Martin, and Mr. Thomas, is now completed and that their report which deals with the precautions to be observed in the use of rock drills will be issued very shortly. I shall at once bring it to the notice of the Transvaal Government. I would at the same time point out that the subject has for some time engaged the earnest attention of the Transvaal Chamber of Mines which has offered prizes for the best practical suggestions and devices for dealing with the matter.

Nursing of Sick Poor.

SIR HARRY SAMUEL asked the President of the Local Government

Board whether the Local Government Board had decided to issue a general order consequent upon the recommendations contained in the report of the departmental committee upon the nursing of the sick poor in workhouses; if so, when such order would be issued and, before such issue, for what Parliamentary period would the order be laid upon the table of the House of Commons for its consideration.—Mr. LONG replied: This matter is receiving my attention with a view to the issue of an order as early as possible. It will not be necessary, however, that the order should be laid upon the table of the House prior to its issue.

WEDNESDAY, MAY 18TH.

Amendment of Lunacy Acts.

The ATTORNEY-GENERAL presented a Bill which was read a first time to amend the Lunacy Acts.—Dr. FARQUHARSON asked whether the Attorney General would give some explanation.—The SPEAKER said that would be out of order.

BOOKS, ETC., RECEIVED.

APPLETON, SIDNEY, 25, Bedford-street, Covent-garden, W.C.

Clinical Lectures and Essays on Abdominal and Other Subjects. By H. D. Rolleston, M.A., M.D.Cantab., F.R.C.P., Physician, St. George's Hospital. Price 5s. net.

BUTTERWORTH AND CO., 12, Bell-yard, Temple Bar, W.C., and SHAW AND SONS, 7 and 8, Fetter-lane, E.C.

A Practical Guide for Sanitary Inspectors. Second edition. By Frank Charles Stockman, Associate of the Sanitary Institute; Lecturer to the National Health Society. With an introduction by Henry Kenwood, M.B., L.R.C.P., D.P.H., Professor of Public Health, University College, London. Price 5s. net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

Unconscious Therapeutics; or, The Personality of the Physician. By Alfred T. Schofield, M.D., M.R.C.S., &c., Hon Physician to Friedenheim Hospital, Author of "The Unconscious Mind," "The Force of Mind," &c. Price 5s. net.

A Manual of Midwifery. By Alfred Lewis Galabin, M.A., M.D. Cantab., F.R.C.P. Lond., late Fellow of Trinity College, London, Consulting Obstetric Physician to Guy's Hospital, late President of the Obstetrical Society of London. Sixth edition. Price 14s. net.

F. A. DAVIS COMPANY, 1914-1916, Cherry-street, Philadelphia, Pa., U.S.A.

Manual of Materia Medica and Pharmacy. Specially designed for the Use of Practitioners and Medical, Pharmaceutical, Dental, and Veterinary Students. By E. Stanton Muir, Ph.G., V.M.D., Instructor in Comparative Materia Medica and Pharmacy in the University of Pennsylvania. Third edition, revised and enlarged. Price $2.00 net.

A Text-book of Physiology. By Isaac Ott, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Price not stated.

HEINEMANN, WILLIAM, 21, Bedford-street, W.C.

Olive Latham. By E. L. Voynich. Price 6s.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Theorie und Praxis der Augengläser. Von Dr. E. H. Oppenheimer Augenarzt in Berlin. Price M.5.

HOEPLI, ULRICO, Milan.

Commentarii di Clinica Medica desunti dalla Morfologia del Corpo Umano. Del Prof. Achille De-Giovanni, Direttore della Clinica Medica Generale della Regia Università di Padova. Parte Generale illustrata da Figure e Tavole. Seconda edizione aumentata. Price L.8.

KIMPTON, HENRY, 13, Furnival-street, Holborn, E.C.

A Text-book on the Practice of Medicine. Designed for the Use of Students. By James Magoffin French, M.D., Lecturer on the Theory and Practice of Medicine, Medical College of Ohio. Price 16s. net.

LEWIS, H. K., 136, Gower-street, W.C.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. Harrison Martindale, Ph D., F.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H. Eleventh edition. Price 9s. 6d. net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

Wounds in War: the Mechanism of their Production and their Treatment. By Surgeon-General W. F. Stevenson, C.B., A.M.S., B.A., M.B., M.Ch. Dublin University, Professor of Military Surgery, Royal Army Medical College, London. Second edition. Price 15s. net.

RUDEVAL, F. R. DE, 4, Rue Antoine Dubois, Paris.

Précis des Maladies des Enfants. Par le Dr. L. Baumel, Professeur de Clinique des Maladies des Enfants à l'Université de Montpellier. Price Fr. 8.

SAUNDERS, W. B., AND COMPANY, 9, Henrietta-street, Covent-garden, W.C.

Treatise on Diseases of the Skin. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology in the Jefferson Medical College and Woman's Medical College, Philadelphia. Third edition. Price 25s. net.

Obstetrics for Nurses. By Joseph B. De Lee, M.D., Professor of Obstetrics, North-Western University Medical School. Price 12s. net.

Atlas and Epitome of Operative Gynecology. By Dr. Oskar Schaeffer, Privat-docent of Obstetrics and Gynecology in the University of Heidelberg. Authorised translation from the German with editorial notes and additions. Edited by J. Clarence Webster, M.D. Edin., F.R.C.P.E., F.R.S.E., Professor of Obstetrics and Gynæcology in Rush Medical College, in affiliation with the University of Chicago. Price 15s. net.

Tuberculosis and Acute General Miliary Tuberculosis. By Prof. Dr. G. Cornet of Berlin. Edited, with additions, by Walter B. James, M.D., Professor of the Practice of Medicine in the College of Physicians and Surgeons (Columbia University), New York. Authorised translation from the German under the editorial supervision of Alfred Stengel, M.D. Price 21s. net.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, Strand, W.C.

A Complete Handbook of Midwifery for Midwives and Nurses. By J. K. Watson, M.D. Edin. Price 6s. net.

What We Owe to Experiments on Animals. By Stephen Paget. Price 1s. 6d. net.

The Case Against Anti-Vivisection. By Stephen Paget. Price 2s. net.

STEINHEIL, G., 2, Rue Casimir-Delavigne, Paris.

Les Tumeurs Malignes Primitives de l'Intestin Grêle (Jéjuno-Iléon). Par le Dr. P. Lecène, Interne Lauréat des Hôpitaux de Paris, Prix Civiale (1903), Médaille d'Or (1904), Prosecteur à la Faculté. Price not stated.

STUBER, A. (C. KABITZSCH), Würzburg.

Beiträge zur Klinik der Tuberkulose. Herausgegeben von Dr. Ludolph Brauer, a. o. Professor an der Universität Heidelberg. Band II. Heft 3. Einzelpreis, M.2.50.

SWAN SONNENSCHEIN AND CO., LIMITED, Paternoster-square, E.C.

The Oxford and Cambridge Year-book. Part I., Oxford. Edited by A. W. Holland, sometime Scholar of St. John's College, Oxford. Price 3s. 6d. net.

THOM, ALEXANDER AND CO., LIMITED, 87, 88, and 89, Abbey-street, Dublin; and LONGMANS, GREEN, AND CO., 39, Paternoster-row, London, E.C.

The Royal University of Ireland. The Calendar for the year 1904. Price not stated.

VOGEL, F. C. W., Leipsig.

Vorlesungen über den Bau der Nervösen Zentralorgane des Menschen und der Tiere. Für Aerzte und Studierende. Von Prof. Dr Ludwig Edinger, Arzt; Direktor des Dr. Senckenbergischen Neurologischen Institutes in Frankfurt am Main. Erster Band. Das Zentralnervensystem des Menschen und der Säugetiere. Siebente, umgearbeitete und vermehrte Auflage. Price M.12.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BENNETT, WILLIAM FREDERICK COCKAYNE, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., L.S.A., has been appointed District Medical Officer of Sheffield Union and Public Vaccinator.

BEYDON, JAMES, M.D. Edin., has been appointed Police Surgeon to the Borough of Hawick.

CARLYON, FREDERICK HAROLD, M.D., C.M. Edin. (formerly of Truro, Cornwall), has been appointed Medical Officer to the South African Constabulary at Johannesburg.

CLARKE, J. JACKSON, M.B. Lond., F.R.C.S., has been appointed Surgeon to the City Orthopædic Hospital.

COWBURN, A. D., M.R.C.S., L.R.C.P. Lond., Barrister, has been appointed Medical Officer of Health to the Honourable Societies of the Inner and Middle Temples.

HAYES, J. R., M.D., M.Ch. R.U.I., has been appointed Medical Officer to the County Kerry Fever Hospital.

HILL, PHILIP E., M.R.C.S., L.S.A., has been appointed Medical Officer to the Post Office, Crickhowell.

HODGE, G., M.B., C.M. Glasg., has been appointed Assistant Physician to the Dumfries and Galloway Royal Infirmary.

HUGHES, HUGH LEWIS, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Post Office, Dowlais.

JOHNSTON, J., M.D. Edin., L.S.A., has been appointed Medical Officer to the Casual Wards, Bolton Union.

MCKELLAR, GEORGE, M.D. Edin., has been appointed Medical Officer of the Borough of Hawick.

MOODIE, D., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Act for the Coxhoe District of the county of Durham.

ORR, ROBERT, M.B., Ch.B. Glasg., has been appointed Certifying Surgeon under the Factory Act for the Ceres District of the county of Fife.

PARSONS, J. HERBERT, B.S., D.Sc., F.R.C.S., has been appointed Assistant Ophthalmic Surgeon to University College Hospital.

SCHOFIELD, F. W., M.B., Ch.B. Vict., has been appointed House Surgeon to the Royal Infirmary, Bradford.

SEVILLE, C. F., M.R.C.S., L.S.A., has been appointed Certifying Surgeon under the Factory Act for the Rothwell District of the county of York.

SNELL, E. H., M.D. Lond., D.P.H., has been appointed Honorary Sanitary Officer to the Coventry and Warwickshire Hospital.

WILLIAMS, CHISHOLM, F.R.C.S. Edin., has been appointed Surgeon to the City Orthopædic Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL INFIRMARY.—Second Assistant Anæsthetist.
BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.
CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn-road, W.C.—House Surgeon. Salary at rate of £50 per annum, with board and residence.
DERBYSHIRE ROYAL INFIRMARY.—Resident House Surgeon. Salary £100 per annum, with apartments and board.
EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician for six months. Honorarium of £25, with board, residence, &c.
EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—House Surgeon. Salary £80, with board, residence, and washing. Also Surgeon to Out-patients.
GREENOCK INFIRMARY.—Assistant House Surgeon. Salary £40 per annum, with board and residence.
HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL, Hastings.—Physician.
HEREFORDSHIRE GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, and washing.
HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £20, washing allowance £2 10s., with board and residence.
LANARK COUNTY COUNCIL.—Assistant Medical Officer of Health. Salary £140 per annum, with travelling expenses.
LONDON HOSPITAL, Whitechapel, E.—Surgical Registrar.
LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—Lecturer on Anatomy.
MANITOBA, UNIVERSITY OF.—New Professorships in Botany (including Geology), Physics (including Mineralogy and Crystallography), Chemistry, Mathematics, Physiology (including Zoology). Salary $2500.
NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer, each for six months. Salaries at rate of £50 per annum, with board, residence, and washing. Also Second Honorary Anæsthetist.
NOTTINGHAM, CITY OF, WORKHOUSE INFIRMARY.—Junior Resident Medical Officer. Salary £120 per annum, with apartments, board, washing, and attendance.
RADCLIFFE INFIRMARY, Oxford.—Honorary Assistant Surgeon and Surgical Registrar.
ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—House Surgeon for six months. Honorarium £25.
ST. PETER'S HOSPITAL FOR STONE, ETC., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing. Also six Clinical Assistants for six months.
SCARBORO' HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £80, with board and residence.
SHEFFIELD CHILDREN'S HOSPITAL.—Lady House Surgeon. Salary £80 per annum, with board, lodging, and washing.
SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon, unmarried, for six months, renewable. Salary at rate of £70 per annum, with residence, board, and washing.
SUSSEX COUNTY HOSPITAL.—Second House Surgeon, unmarried. Salary £60 per annum, with board, residence and washing.
WESTERN GENERAL DISPENSARY, Marylebone-road.—Second House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.
WEST SUFFOLK GENERAL HOSPITAL, Bury St. Edmunds.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.
YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

BRIERLEY.—On May 12th, at Dumfries-place, Cardiff, the wife of Edward Ethelston Brierley, M.B., F.R.C.S.E., of a son.
JENNINGS.—On May 8th, at Bowdon, Cheshire, the wife of Lieutenant-Colonel R. Jennings, R.A.M.C., Malta of a daughter.
WHITE.—On May 11th, at The Dower House, Bughrooke, Weedon, Northamptonshire, the wife of Percy Stanhope White, M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGE.

MASINA—PARAKH.—On April 16th, at Bombay, India, Hormasji Manekji Masina, F.R.C.S., to Jerbai Burjorjee Ratanji Parakh, B.A.

DEATH.

HORDEN.—On the 5th May, at 15, Brixton-hill, S.W., suddenly, Herbert Henry Horden, M.D. Lond., M.R.C.S., L.R.C.P., youngest son of the late Right Rev. Dr. Horden, Bishop of Moosonee, and of Mrs. Horden, 18, Messina-avenue, West Hampstead, N.W., aged 38 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"DR." W. S. RICE.

A CORRESPONDENT has forwarded to us a selection of literature emanating from the quack who calls himself "Dr." W. S. Rice and who lives at Stonecutter-street, London; Adams, N.Y., U.S.A.; Boston, Mass., U.S.A.; and Toronto, Ont., Canada. Rice of course promises cures in all forms of rupture and at any age, from infancy to men past 90. A personal examination is not necessary but cash must be sent with all orders unless "goods are to be shipped by Express C.O.D." Like all others of his kidney, he incloses testimonials purporting to come from persons who have been cured by his treatment and he also sends a booklet called "The Man Who Wondered Why." In this work he sets forth his views on the causation of hernia and on its cure by means of his "Lymphol" and truss and here they are. A rupture, it appears, is caused by the weight of the abdominal contents crowding through a break in the abdominal muscles. Supposing that the rupture is put back lymphol must be rubbed on. It penetrates the pores, stimulates the lymphatics, calls them into action, and the stimulation of the lymphatics starts an increased secretion of lymph directly upon the calloused ring of the ruptured opening and fills it up with new flesh. In another pamphlet, "How to Cure Rupture," Rice says that lymphol will soften and lubricate the parts involved so that the rupture is safely, easily, and painlessly returned into the abdominal cavity. Rice, of course, is a pernicious quack, but just as the receiver sins equally with thief so are the proprietors of magazines and newspapers who insert Rice's advertisements, and those of the Pointings, McLaughlins, and their congeners, as much to blame morally as the quacks themselves. The quacks lie to the public for gain; the careless newspaper owners afford the quack the opportunities for lying and are paid for the facilities that they offer.

A QUESTION OF FEES.

To the Editors of THE LANCET.

SIRS,—I should be glad to know whether magistrates have discretion as to the payment of a medical witness? The circumstances that give rise to the question are, briefly, these. A man with cardiac disease in the workhouse infirmary got upset and took his discharge against my advice. When he appeared before the master the master demanded 24 hours' notice. He therefore presently fell into the hands of the labour master who gave him work to do without first referring to me. After a little the man refused to do any more and became insolent and the labour master promptly had him arrested. The magistrates who saw him at once adjourned the case that I might appear. I did so and gave evidence as above and stated that in my opinion the man was not fit to do the work that was asked of him, though it was partly his own fault that he was given work to do at all. When I asked for the usual fee for medical evidence the clerk stated that the magistrates did not see their way to grant a fee. Thanking you in anticipation of an answer, I am, Sirs, yours faithfully.

May 15th, 1904. E. C. T.

*** The magistrates have discretion. The order of the Home Office regulating the payment of fees to witnesses does not say that there "shall," but that there "may," be fees allowed up to certain specified amounts.—ED. L.

A WORM IN THE EYE.

The *St. Petersburger Medicinische Wochenschrift* quotes what it calls a unique case reported by Dr. Jeweski to the Yurjev Society of Naturalists. He said that in February last a boy aged five and a half years was taken to him, who had suffered with eye trouble since September last, but only lately with pain and serious disturbance of vision. An examination revealed the presence of a bluish-grey worm in the fore part of the eye just behind the cornea. It was about seven millimetres long and on its removal by an operation the lad's sight was rapidly recovered. Dr. von Kennel, professor of zoology, to whom the worm was handed for more particular examination, reported it to be 7·4 millimetres long, one millimetre in diameter, almost quite transparent, and in ten segments.

A CRYPTIC ASPECT OF THE CRY OF PAIN.

To the Editors of THE LANCET.

SIRS,—Your annotation (THE LANCET, April 23rd, p. 1142) to my inquiry under the above heading should amply demonstrate to those who have good opportunities of observation that there still remains an unexplored work in a most interesting field of inquiry. And the survey you make of the cry of pain in its natural habitat amongst other "expressions of emotion," together with your admission of failure to find any explanation bearing directly upon the point raised, will yet, I hope, bear good psychological fruit in inducing some readers to probe amongst the by-ways of their experience in connexion with suffering for some direct evidences of the effect produced in a sufferer's own psychical life by the auditory impression of his own cry of pain.

The candour of your admission with regard to published observations

on this point has a special value for a psychological worker who has come upon a difficult and out-of-the-way aspect of a phenomenon which is in itself so common as the cry of pain. There is in such a subject the danger of struggling and straining in far-off places after evidences which may be as familiar as the light of day to the regular worker in the vicinity of extreme suffering. But this candour is in strict harmony with the spirit in which Darwin himself drew his conclusions in the "expression of the emotions" to which you make reference. Darwin evidently fully appreciated the difficulties of his subject and, far from dogmatising, he scrupulously cleared the ground for other workers. Take, for example, his emphatic warnings against looking at the expression of the emotions from an exclusively communicative standpoint; his insistence that, "on the contrary, every true or inherited movement of expression seems to have had some natural and independent origin. But when once acquired such movements may be voluntarily or consciously employed as a means of communication" (p. 356). Now, of course, the communicative values of the cry of pain may be left entirely unchallenged by the observer who notes the psychical value of the cry by way of the auditory impression made on the sufferer, nor, as far as I can see, need we controvert any view that may be held as to the importance to the sufferer of the sense of muscular effort in producing the cry. It is solely a question of fact.

Direct observation may prove difficult and results not very encouraging. The mere cry of pain can only at best produce an elementary sensation, a sensation which, at all events, has no power of competing with the psychical riches of the simplest articulate syllable of human speech. But notwithstanding this psychical poverty in comparison to other uttered sounds I appeal that the cry of pain should be observed and studied in the aspect suggested.

May I, Sirs, make one indication of a line of observation? A sufferer is sinking to a state of mental inertia. He utters a cry, a groan. This cry or groan is a stimulus; it exerts some influence on the sufferer's psychical life by way of his hearing. This is entirely beyond question. What remains to be done is to observe and to record this influence as closely as possible. Use the best means at the disposal of modern psychological observation to ascertain the full measure of this influence. Does the sufferer's cry tend to arrest even for a moment the oncoming of psychical inertia? Then record the fact and let it stand among the data of science. Cries of pain usher the human consciousness out of the psychical inertia of birth, then, so to speak, leave it *for* a while, but come again to usher it into the psychical inertia of death. Therefore I again appeal to workers in the vicinity of physical and mental suffering to observe this cryptic aspect of the cry of pain and I am of opinion that they may thus lend a hand in a most important psychological revelation.

I am, Sirs, yours faithfully,

London, May 11th, 1904. PSYCHOLOGUS.

HOLMAN TESTIMONIAL FUND.

THE following further list of contributions has been forwarded to us by the honorary treasurer of this fund, Dr. John H. Galton, Chunam, Sylvan-road, Norwood, S.E., by whom or by the secretary, Mr. W. A. Berridge, Oakfield, Redhill, Surrey, subscriptions will be received:—

	£	s.	d.		£	s.	d.
Dr. C. Gibson...	1	1	0	Dr. R. B. Wrighton	1	1	0
Mr. T. J. Watts	1	1	0	Mr. George Roe Carter ...	1	1	0
Mr. W. Wallis	0	10	6	Mr. Giles Lockwood L. Hawken	2	2	0
Mr. P. Purnell	1	1	0				
Dr. Thomas Bridgwater	3	3	0	Mr. F. Boxall	1	1	0
Dr. J. Ward Cousins ...	1	0	0	Sir George H. Philipson...	1	1	0

AN ABNORMAL FŒTUS.

Mr. Edward H. Greaves, M.R.C.S. Eng., L.R.C.P. Lond., describes in the *Guy's Hospital Gazette* of May 7th a fœtus having the following measurements: total length, 23½ inches; circumference of neck, 10 inches; circumference round shoulder, 20 inches; circumference round chest, 16½ inches; and circumference round pelvis at crest, 15½ inches. The fœtus weighed 30 pounds 4 ounces. The patient, a cowman's wife, three years ago gave birth to a child weighing 18 pounds. "The labour was difficult but natural and not unusually long," says the narrator; "no instruments used or chloroform given and no injury to maternal parts." The child died during delivery. The mother believes herself to have been pregnant exactly 11 months.

THE SCOTCH OATH.

To the Editors of THE LANCET.

SIRS,—The Morecambe coroner is reported to have asked dozens of doctors why they hold their hands up to take the oath—Scotch custom—and they could not tell him. The answer is found in Genesis, chapter 14, verse 22, and sequel.

I am, Sirs, yours faithfully,

JAMES T. T. RAMSAY, L.R.C.P., L.R.C.S. Edin., &c.

Blackburn, May 16th, 1904.

FIRE-WALKING IN THE FIJI ISLANDS.

AT a meeting of the Anthropological Institute held on Feb 23rd the Hon. W. L. Allardyce, C.M.G., delivered an address the subject of which was the Fijians in Peace and War. An abstract of it published in the May number of *Man* gives some details relative to the practice of fire-walking which is performed only on the island of Beqa and by the members of a particular tribe. After a brief notice of the legend which describes how a certain family became possessed in perpetuity of the privilege of immunity from fire, Mr. Allardyce goes on to remark:—

"The ceremony which is supposed to commemorate this event is conducted as follows: A circular pit is dug, three feet deep and 36 feet across; this is filled with alternate layers of timber and stones. The pile is kindled and burns for about 12 hours when the embers are removed by means of non-combustible vines and the red-hot stones are levelled by means of levers made from similar materials. The 12 or 14 members of the privileged tribe come forward and walk round through the oven on the stones. The heat of the latter is considerable. A handkerchief laid on one of the stones was charred and a thermometer suspended over the centre of the oven registered 280 deg. Fahr., when the solder melted. Mr. Allardyce examined the feet of the performers both before and after the ceremony and was convinced that no preparation of any kind was rubbed on them. No signs of burning were discovered, and even the hair on the leg was not singed. The length of time occupied by this part of the ceremony is not more than a minute; the performers walk quite slowly. After this leaves and masawe are thrown on the stones and the latter baked and eaten.

"As a partial explanation of this apparent immunity from fire the lecturer mentioned the fact that the village faces north-west and is consequently sheltered from the prevailing wind (the S.E. trade), while it is exposed to the full heat of the sun. The natives are accustomed to walk about barefoot on the rocks when the latter are at such a temperature that an European cannot keep his hand on them, and in this way the soles of the feet become hardened. Doubtless the intense faith of the performers also contributes to their security."

To the foregoing account the editor of *Man* appends the following note: "As an instance of the amount of heat which the foot, even of an European, will stand, I may mention that I have seen a cadet in the merchant service, who had been accustomed to walk about the deck bare-foot, hold a lighted wax match under his heel with the flame licking the skin until burnt out. He assured me that he felt no inconvenience from the heat and certainly no signs of burning appeared on the skin."

A NEW SPARKLET SYPHON.

AERATORS LIMITED, of Broad-street Avenue, E.C., point out with reference to a notice of this syphon in our issue of May 7th that when traces of iron occur in the aerated water they are not derived from the spout but arise from leaving the steel bulb in position after emptying the syphon.

J. A. H. F. will find in THE LANCET of Oct. 14th, 1899, p. 1055, the information he or she desires.

Mr. J. Warburton will find complete information in THE LANCET for the years 1871 and 1872.

G. P. writes:—Can any readers advise me what books I should read for the F.R.C.S. Edin.?

Mrs. H.—We do not give medical advice or recommend medical treatment.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M., St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (25th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (26th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (28th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES

WEDNESDAY (25th).—DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND (20, Hanover-square, W.).—4.30 P.M. Annual Meeting and Conference. Oration:—Dr. H. A. G. Brooke: The Clinical Relationships of Seborrhœa.

FRIDAY (27th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5.30 P.M. Cases will be shown by Dr. E. Cautley, Mr. F. Jaffrey, Mr. W. Edmunds, Mr. H. Tod, Dr. W. Emery, Mr. H. Balme, Mr. A. D. Reid, and Mr. T. Walker. Papers:—Mr. W. W. Cheyne, Dr. R. H. W. Welbe, and Mr. L. Mummery.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Annual General Meeting. Election of Officers for Session 1904-5. Papers:—Dr. D. W. Finlay: A Case of Pneumothorax treated by Incision and Removal of Ribs.—Dr. H. B. Thompson and Dr. C. U. Aitchison (introduced by Dr. P. Kidd): Two Cases of Tumour of the Left Auricle simulating Mitral Stenosis.—Mr. H. B. Robinson: Femoral Aneurysm in Hunter's Canal, Ligature of Superficial Femoral and Popliteal Arteries, Cure of Aneurysm, Death from Cardiac Disease Ten Weeks later.—Mr. C. H. Keyser: Case of Congenital Elevation of the Scapula.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

TUESDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. Taylor: Clinique. (Medical.)

POST-GRADUATE COLLEGE (London County Lunatic Asylum, Hanwell).—5 P.M. Dr. R. H. Cole: Puerperal Insanity.

ST. PETER'S HOSPITAL (Henrietta-street, Covent Garden.)—3.30 P.M. Mr. P. J. Freyer: Surgical Diseases of the Kidneys.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.). 3.30 P.M. Dr. Batten: The Reflexes.

WEDNESDAY 25th.—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. T. P. Legg: Clinique. (Surgical.) 5.15 P.M. Dr. A. P. Luff: The Forms of Diabetes and the Differential Examination of the Urine.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

UNIVERSITY COLLEGE (University of London) (Physiological Theatre).—5 P.M. Dr. W. P. May: Advanced Lectures on the Tracts of the Brain—Lecture IV.: Motor Paths.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Perkins: Angina Pectoris.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL (St. George's Hospital).—8.30 P.M. Prof. H. Marsh: (a) Intermittent Hydrops of the Joints; (b) The Influence of Growth on Deformities. (Hunterian Lecture.) All members of the medical profession are invited to attend.

THURSDAY 26th.—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. T. W. Eden: Purulent Endometritis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. S. Edwards: Rectal Fistula.

CHARING CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Demonstration of Surgical Cases. (Post-Graduate Course.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Dr. J. E. Squire: General Principles of Treatment of Respiratory Affections. (Post-Graduate Course.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. A. J. Whiting: Affections of the Cranial Nerves.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Poynton: On the Use of Citrate of Soda in Infant Feeding.

FRIDAY 27th.—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. L. Lack: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Paget: Surgical Cases.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Batten.

SATURDAY (28th).—ST. PETER'S HOSPITAL (Henrietta-street, Covent Garden).—2.30 P.M. Mr. J. W. T. Walker: Diagnosis in Urinary Disease.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 19th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
May 13	30·23	S.W.	...	102	67	52	54	56	Overcast
,, 14	30·00	S.W.	...	122	73	56	58	62	Cloudy
,, 15	30·03	S.W.	...	120	70	47	53	59	Fine
,, 16	30·05	S.E.	...	121	73	49	55	61	Fine
,, 17	29·76	W.	...	116	68	58	55	59	Cloudy
,, 18	29·96	W.	...	121	64	49	49	55	Fine
,, 19	30·10	N.W.	...	116	60	46	48	53	Cloudy

During the week marked copies of the following newspapers have been received:—*Daily Express (Dublin), Belfast News Letter, Cheshire Daily Echo, Stockport Advertiser, Westmeath Independent, Western News (Galway), Glasgow Herald, Irish Times, Eastern Morning News, Aberdeen Free Press, Sussex Daily News, Dublin Times, Birmingham Post, Surrey Advertiser, Notts Guardian, Westminster Gazette, Dublin Express, Bradford Observer, Hereford Mercury, Sanitary Record, Local Government Chronicle, The Scotsman, Evening News, Surrey Comet,* &c.

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